

# COMPREHENSIBILITY OF TEXT INFORMATION – CONCEPTS AND APPLICATIONS IN CONTEMPORARY STUDIES IN ACCOUNTING

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**Abstract:** This article presents part of the available arsenal of the developed quantitative and qualitative approaches for the assessment of text comprehensibility (readability) existing in western literature. Special attention is paid to their practical and application function in empirical research related to accounting. A conceptually new integrated approach is presented, the results of which could lead to a more precise metrication of the readability of disclosures of enterprises.

**Key words:** assessment of text comprehensibility (readability), quantitative and qualitative approaches, disclosures.

**JEL:** M49.

Text is the basic unit of communication where language is realised as a means of communication. In the act of communication, the text is an intermediary between the participants in the speech communication, aiming at achieving a certain effect on the persons it is addressed to. A condition for the success of this communication is the ease of communication. These reflections, within the context of public disclosures, determine the crucial role of the written material used in the communication between the enterprises and the people concerned. The aim is for the latter to get relevant information related to the financial position, results from the

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activity, as well as the prospects for development of the enterprise. Therefore, it is important to present the data precisely and clearly, semantically and linguistically adequately, in an informative, complete and integrated way. All these characteristics contribute to the smooth understanding of the written information by the people it is addressed to.

The aim of this article is to present the existing arsenal of the developed quantitative and qualitative approaches for assessment of the text comprehensibility (readability). This goal requires studying and analysing the existing scientific research related to the metrication of the readability of the written texts in western literature, as well as their practical application in research related to accounting. The latter will be subjected to a critical analysis by highlighting the advantages and limitations arising in relation to their application.

The reasons for writing this article are influenced by the lack of theoretical, methodological and empirical research on the topic in specialist Bulgarian scientific literature<sup>1</sup>. The limited volume of this study requires that only the most important studies on the subject found in western literature are considered.

### ***The concept of test readability***

The information needs of the users are continuously growing, but some of them (e.g. the outside users like – shareholders, suppliers, clients, lenders, etc.) have a limited access to information on the activity of the enterprise. A main source of information for these people are namely the financial statements which give them the necessary information about the results achieved by the enterprise (profitability), its property status and financial position, as well as an assessment of the ability of the managers to use effectively its resources for achieving the pre-defined goals<sup>2</sup>. In this context, the generally acceptable framework of principles and rules has a great importance for the preparation of statements, presenting timely

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<sup>1</sup> This is the reason for using and referring mainly to foreign research and studies in this article.

<sup>2</sup> **Filipova, F.** Finansovoto schetovodstvo i kachestvoto na finansovo – schetovodnata informatsiya, IU – Varna, Izdatelstvo "Nauka i ikonomika", 2012

information in an adequate and complete way which is intended to assist the persons concerned in taking business decisions.

One common requirement for the financial statements regulated in art.23 from the Accountancy Act<sup>3</sup> effective from 01.01.2016 is for **truthful and fair presentation** of the property's status and financial position, financial results from the activity of the enterprise, cash flows and equities, as well as **clear and comprehensible contents of the financial statements**. Additional requirements regarding the qualitative characteristics of the accounting information disclosed can be found in both of the applicable accounting benchmarks – the National and International accounting standards. According to the requirements of the National accounting standards – General provisions<sup>4</sup>, 'the information presented in the financial statements must be comprehensible, relevant, reliable and comparable'<sup>5</sup>. The comprehensibility of the information in the financial statements is linked on the one hand to the way it is presented (clearly and accessibly), and on the other – to the knowledge and the preparedness of the users, which is of considerable importance. Namely, in order to be comprehensible the information in the financial statements of the enterprise has to be able to assist people with acceptable average level of preparation in the field of economics and financial reporting when taking business decisions. Such knowledge is believed to allow the interested users to read, understand and interpret adequately and correctly the information disclosed by the enterprise.

The other accounting benchmark applicable in the country – the International accounting standards - also contains requirements regarding the qualitative characteristics of the information disclosed by the enterprises and in particular – its comprehensibility. The conceptual framework for financial reporting with IAS/IFRS currently effective classifies these qualitative characteristics in two groups – fundamental and improving

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<sup>3</sup> Promulgated in State Gazette. issue 95 from 8.12.2015

<sup>4</sup> Promulgated in State Gazette, issue 30 from 7 April 2005, amended – State Gazette, issue 86 from 26 October 2007, Amended - State Gazette, issue 3 from 12 January 2016.

<sup>5</sup> In connection with the subject of this article we are going to focus our attention only on the qualitative characteristic 'comprehensibility' of the information in the financial statements of the enterprises.

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the usefulness of the information. The comprehensibility of the information is defined as an improving qualitative characteristic whose function is to supplement the fundamental ones by assisting in the choice of an approach for presenting a particular transaction, event or article, which could be presented in different equally reliable and appropriate ways<sup>6</sup>. The regulations of the framework of IAS also emphasise on the understanding that, in order for it to be comprehensible, the information in the financial statement has to be clearly and accurately presented, as should it be able to help the users with economic and accounting knowledge, who analyse the information with the necessary diligence.

The term 'readability' is one of the most important factors defining some texts as easier for reading than others, as well as determining the efficiency of the written material. Readability means the ease with which we read and understand a specific text. In the Bulgarian thesaurus dictionary<sup>7</sup>, the word 'readability' is defined as a quality of a text, which is easy and interesting to read. It is often mistakenly associated with the term 'legibility', which has a different semantic meaning and relates only to the external appearance and layout of the text.

G. Klare<sup>8</sup> defines readability as 'the ease of understanding and comprehension due to the style of writing used'. The author focuses on the writing style, which is viewed as a separate element of the content, consistency and organisation of the text. Similarly, G. Hargis<sup>9</sup> points out that readability is an attribute to clarity, measured by 'easy to read words and sentences'. G. McLaughlin<sup>10</sup> defines it as 'the extent to which a certain category of people find a certain piece of reading exciting and comprehensible'. This definition emphasizes the interaction between the

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<sup>6</sup> **Petrova**, R. Predstavyaneto vava finansovite otcheti kato sredstvo za manipulirane vazpremaneto na schetovodnata informatsiya. // *Biznes upravlenie*, 2016, №1, p. 19

<sup>7</sup> <http://www.t-rechnik.info>

<sup>8</sup> **Klare**, G. *The measurement of readability*. // Ames, Iowa: Iowa State University Press, 1963.

<sup>9</sup> **Hargis**, G., Hernandez, A., Hughes, P., Ramaker, J., Rouiller, S., Wilde, E. *Developing quality technical information: A handbook for writers and editors*. // Upper Saddle River, NJ: Prentice Hall, 1998.

<sup>10</sup> **McLaughlin**, G. SMOG grading - a new readability formula. // *Journal of reading* 22, 1969, p. 639-646.

text and the subjectivity of the readers, who possess certain characteristics like reading skills, knowledge and motivation.

Two other authors - E. Dale and J. Chall<sup>11</sup>, give an extremely precise definition, according to which readability is 'the total sum (together with all arising interactions) of all elements within the framework of a given part of the printed material, affecting the degree of success the readers have with it. Success is the degree to which they understand the text, read it with interest and ease'.

The aim of the first studies of readability is to develop a practical methodology, combining the reading materials with the abilities of the separate subjective differences of the individuals. These efforts are directed towards the creation of mathematical formulas. The English professor of literature L. Sherman<sup>12</sup> sets the beginning of the studies on the topic in 1880. He finds out that ***with the help of short sentences and accurate expressions the general readability of a text can be increased***. The author points out that the written information can be the object of a statistical analysis by revealing the key meaning which has the average length of the sentence.

In 1920, one main trend stimulates the development of the studies related to readability, namely the increasing use of scientific instruments for studying and measuring educational problems. In 1921 E. Thorndike<sup>13</sup> published a book where he analyses the most commonly used 10 000 words in a person's vocabulary. The author concludes that the most commonly used words are the easiest ones and their use is mechanical. Thorndike finds out that the more commonly a word is used in the text, the more familiar and easy to read the written material is.

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<sup>11</sup> See **Edgar**, D., Chall, J . A Formula for Predicting Readability. // S&BS, Number 31, August 2, 1982, p. 18.

<sup>12</sup> See **Sherman**, A. Analytics of literature: A manual for the objective study of English prose and poetry.// Boston: Ginn & Co, 1893. Available online at: <https://archive.org/stream/analyticsofliter00sherooft#page/x/mode/2up> [Accessed 24 Jan..2016.]

<sup>13</sup> See **Thorndike**, E. The teacher's word book. //New York: Bureau of Publications, Teachers College, Columbia University, 1921. Available online at: <https://archive.org/stream/teacherswordbook00thoruoft#page/n5/mode/2up> [Accessed 24 Jan..2016]

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After Thorndike, K. Zipf<sup>14</sup> uses statistical analysis of the language to show that human speech is governed by the principle of the least effort. The author argues that there is a mathematical connection between complex and simple words, known by the name of 'Zipf curve'. The concept of the least effort has turned into a main function of the language and is one of the fundamental bases related to the frequency of the words used.

However, the main concern of researchers, teachers, writers and journalists addresses the problem with the lack of a generalised method for measuring text readability. As a result, a series of studies have been conducted in the field of readability, for example: E. Dale and R. Tyler (1934), B. Leary and W. Gray (1935), R. Flesch (1946, 1949, 1964), E. Dale and J. Chall (1948), R. Gunning (1952), W. Taylor (1953), G. Klare (1963, 1975, 1980), G. McLaughlin (1968), E. Fry (1963, 1977) and many others. The techniques developed by the researchers demonstrate that they are extremely useful for those groups of people who are really concerned about the comprehensibility of the texts created by them.

### ***Approaches for assessment of text readability***

The earliest approaches for text readability are the quantitative approaches, presented by mathematical formulas. The main process in this assessment includes calculation of the combinations of syllables, words, sentences and paragraphs, in order to assess the level of difficulty of the language level used<sup>15</sup>. The quantitative approach contributes to the study of the textual specificity by taking into account the characteristic feature of the text variables like word length, sentence length, and number of syllables and gives an evaluation upon application of the mathematical formula. This numerical value metrified the comprehensibility of a given text.

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<sup>14</sup> Zipf, G. Human behavior and the principle of least effort: An introduction to human ecology.// New York: Addison-Wesley, 1949.

<sup>15</sup> See **Woods**, B., Moscardo, G., Greenwood, T. A critical review of readability and comprehensibility tests.// The Journal of Tourism Studies. 9(2), 1998, p. 49-61. Available online at:

[https://www.jcu.edu.au/\\_\\_data/assets/pdf\\_file/0003/122097/jcudev\\_012662.pdf](https://www.jcu.edu.au/__data/assets/pdf_file/0003/122097/jcudev_012662.pdf)  
[Accessed 24 Jan.2016]

In 1921, the psychologist H. Kitson<sup>16</sup> published the book 'The mind of the buyer' in which he reveals the reasons why readers of different magazines and newspapers differ from one another. He finds out that the sentence length measured in words and that of words measured in syllables are important measures of readability. Kitson does not invent a formula but he demonstrates how these two variables work applied within the context of the analysis. Almost thirty years later this finding is used by R. Flesch<sup>17</sup> in a formula developed by him called Reading Ease.

In 1935, W. Gray and B. Leary<sup>18</sup> published an outstanding paper named 'What makes a book readable'. The authors identify 228 elements, which influence the recognisability of a text by grouping them in four groups according to their importance: 1) content; 2) style; 3) layout; and 4) organisational features of a text. They establish that only the style can be measured statistically. Although they do not ignore the other three categories the authors concentrate on 80 variables reflecting the style of the text, 64 of which can be authentically metrified. As a result, Gray and Leary use five components for the invention of a formula. The authors establish that two main variables are extremely helpful for assessing readability – the semantic (the meaning of the words) as a measure of the difficulty of the vocabulary and syntax (sentence structure) as an assessment of the average length of the sentences.

In 1948, E. Dale, in collaboration with J. Chall, developed a formula called Dale-Chall<sup>19</sup>, aimed at measuring the readability of texts for children and adults. Unlike all other contemporary formulas, Dale-Chall uses a list of 3 000 simple words, 80% of which are known to the readers who have graduated fourth grade. To apply this formula the difficult words have to be counted, i.e. the ones that are outside of the developed list, and also the

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<sup>16</sup> **Kitson**, H. The mind of the buyer. New York: Macmillan. 1921. Available online at: <https://archive.org/details/mindbuyerapsych00kitsgoog> [Accessed 24 Jan.2016]

<sup>17</sup> **Flesch**, R. The art of readable writing. New York: Harper , 1949.

<sup>18</sup> **Gray**, W., Leary, B. What makes a book readable. Chicago: Chicago University Press, 1935. Available online at:[https://archive.org/stream/whatmakesabookre028092mbp/whatmakesabookre028092mbp\\_djvu.txt](https://archive.org/stream/whatmakesabookre028092mbp/whatmakesabookre028092mbp_djvu.txt) [Accessed 24 Jan.2016]

<sup>19</sup> **Edgar**, D., Chall, J. Cited above

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average length of the sentences, measured in terms of number of words, has to be calculated. The formula looks like this:

$$Score = 0.1579 \times PWD + 0.0496 \times ASL + 3.6365,$$

**where:** *Score* –reading class of the reader; *PWD* – percentage of difficult words; and *ASL* – average length of sentences.

As one of the earliest statistical models for assessment, this formula has been verified through the years by numerous researchers who read high coefficients of correlation when applying it.

In 1948, R. Flesch<sup>20</sup> published an assessment model that was to become one of the most popular mathematical formulas in the history of readability studies. It includes three variables – number of sentences, number of words and number of syllables in the text. The formula combines the average number of words in the sentences and the average number of syllables in the words. The result gives information about the approximate degree of education, necessary for an easy reading of an analysed text, presented as a numerical assessment known as Reading Ease. The score scale starts from 0 and reaches 100, where the range between 60-70 is accepted as a standard for a perfect evaluation of an intelligible text.

The Flesch Reading Ease formula looks like this:

$$Score = 206.835 - (1.015 \times ASL) - (84.6 \times ASW),$$

**where:** *Score* – grade from 0 (difficult) to 100 (easy); *ASL* – average sentence length in words; and *ASW* – average number of syllables in words.

In 1975, the Reading Ease formula is recalculated to a scoring category of readability. The new metrics are called the Flesch-Kincaid Grade-Level and leads to a numerical result known as the Flesch-Kincaid Reading Grade Level.

One of the easiest formulas to use for text readability assessment is the Fog index, developed by R. Gunning<sup>21</sup> in 1952. The formula uses variables like the average number of words in sentences and of the percentage of words, containing three or more syllables.

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<sup>20</sup> Flesch, R. Cited above

<sup>21</sup> Gunning, R. The technique of clear writing.// New York: McGraw-Hill, 1952.



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

The value of the index, according to the standards of interpretation, is as follows: Fog  $\geq$  18 – the text is unreadable; 14-18 – the text is difficult to read; 12-14 – acceptable text; 10-12 – easy text; and 8-10 – text of remarkable ease.

The publication of the formulas of Flesch, Dale-Chall and Gunning marks the end of the first period of readability assessment. Their authors present to the public attention the problem of assessing text readability. All this gives rise to new discussions not only on the topic of how to improve the existing formulas, but also on finding new approaches to identify other factors influencing readability.

Apart from the formulas presented above for readability assessment, in theory and practice there is a great arsenal of quantitative approaches, that are applied in different areas of the studies on the topic. Until 1980 there were more than 200 formulas and thousands of published studies connected with the factor of readability.<sup>22</sup> In spite of the numerous studies proving the theoretical and statistical validity of the quantitative approaches, they were the subject of fierce critical discussions. As a result, the idea of a qualitative analysis of readability began. Many researchers believe that the assessment itself of the readability of the textual characteristics cannot determine the clarity of the respective text. Moreover, they emphasize subjective factors, which determine the level of readability of the written material like knowledge of the reader, personal interest, purpose of reading, etc.

A new period of research into readability emerged, characterised by uniting the achievements on the subject and more detailed research, and the idea of a qualitative assessment of texts appeared. One of the first attempts in this direction belongs to W. Taylor<sup>23</sup> in 1953, with the approach

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<sup>22</sup> **DuBay**, W. The Principles of Readability. 2004. Available online at: <http://www.impact-information.com/impactinfo/readability02.pdf> [Accessed 24 Jan.2016]

<sup>23</sup> **Taylor**, W. Cloze procedure: A new tool for measuring readability.// Journalism quarterly, Vol. 30, 1953, p. 415-433.

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called the 'cloze procedure'. The author argues that words are not the best measurement of text difficulty, but rather the way they relate to each other. He suggests using tests with omitted (deleted) words, which the readers have to complete with the missing words, thus demonstrating their abilities to comprehend the respective text.

The 'Cloze' approach measures the level of individual (subjective) abilities for reading, the lexical level as well as the degree of preparation in the thematic area of the given individual, the language skills and the general level of understanding. It quickly gained popularity as a research tool and became the subject of intensive studies with an approximate number of 1000 publications.

The qualitative approach focuses on the personal characteristics of the reader, his ability to read, his background knowledge, interest and motivation. In 1980, as a result of the influence of cognitive psychology and linguistics, the structural factors in texts and their effect on estimating readability became the subject of research. Interest in the qualitative (subjective) assessment of readability increased and it was believed that it could not be measured with formulas.

Many researchers acknowledge the empirically proved qualities of the formulas for assessment of readability. The quantitative approaches became some of the main instruments for each study, being an objective rather than a subjective means of measuring the level of difficulty of the written material. On the other hand, researchers who criticize the use of the formulas often justify themselves via the lack of accuracy of the results obtained due to their application. Some of them even express the extreme view that these discrepancies deprive them of their usefulness<sup>24</sup>. In fact, many of the critics omit statistical confirmations (indicators for correlation) of the quantitative approaches convincingly present in empirical research.

It has to be said that an important reason for the discrepancies are also the different variables used in the readability formulas. The latter take part with a varying weight in the separate quantitative approaches, thus

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<sup>24</sup> **Kern**, R. Usefulness of readability formulas for achieving Army readability objectives: Research and state-of-the-art applied to the Army's problem.// Fort Benjamin Harrison, ID: Technical Advisory Service, U.S. Army Research Institute, 1979.

reading specific aspects of the analysed texts. Logically, the results differ in accordance with the different mathematical formulas used for assessment of the text readability. In conclusion, we should say that the formulas are not absolutely perfect indicators of the intelligibility of written material. Rather, they provide probabilistic statements or assess the approximate difficulty of a given text.

***Empirical research connected with the readability of disclosures in accounting***

The existing empirical research connected with the readability of the texts in accounting focus on different parts of the financial statements of enterprises. This article will focus on the studies carried out in the field of text readability of disclosures and will list the factors affecting its comprehensibility.

Table 1 from Appendix №1 presents publications by authors researching the readability of public information published by enterprises and some of them look for connection between the intelligibility of the text and the various indicators reporting the performance of the companies.

There is very little research in western literature that attempts the metrification of the readability of disclosures of enterprises. This is a surprising fact, taking into account the significance of public information for investors, regulatory bodies and all other stakeholders. The empirical evidence of the research presented in this field is too scarce but all of it testifies that disclosures that are hard to comprehend (S. Pashalian and W. Crissy<sup>25</sup>; M. Still<sup>26</sup>; F. Soper and R. Dophin<sup>27</sup>; A. Barnett and K. Leofflet<sup>28</sup>) and a tendency towards improvement of their readability and ease of

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<sup>25</sup> **Pashalian, S.**, Crissy, W. How readable are corporate annual statements? // Journal of Applied Psychology, Vol 34(4), Aug 1950, p. 244-248.

<sup>26</sup> **Still, M.** The Readability of Chairman's Statements. // Accounting and Business Research, Vol. 3, Issue 9, Winter 1972, p. 36-39.

<sup>27</sup> **Soper, F.**, Dolohin R. Readability and Corporate Annual Statements. // The Accounting Review, April 1964, pp. 358-362.

<sup>28</sup> **Barnett, A.**, Leoffler, K. Readability of accounting and auditing messages. // Journal of Business Communication 16, 1979, p. 49-59.

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comprehension by the reader (F. Soper and R. Dophin<sup>29</sup>; A. Barnett and K. Leofflet<sup>30</sup>).

Other research is based on the assumption that managers are motivated to present the results from the performance of enterprises in quite a mercenary way (hypothesis of obfuscation). The managers would like to hide the bad news related to the activity of the enterprise, by presenting their failures in a vague, confused and sparing way, and by focusing on their successful achievements over the accounting periods. This is the conclusion reached by the following authors: A. Adelberg<sup>31</sup>; M. Jones<sup>32</sup>; H. Barker and D. Kare<sup>33</sup>; M. Smith and R. Taffler<sup>34</sup>; R. Subramanian, R. Insley and R. Blackwell<sup>35</sup>; F. Li<sup>36</sup>. The statements that are difficult to read are related to the bad financial results that were achieved and vice versa. This correlation between the vague and difficult to read texts and the poor results of the enterprises validated the hypothesis of obfuscation. Moreover, enterprises with good results have a constant style of writing in the annual reports, which are characterised with the lack of jargon and complex definitions. On the contrary, companies with poor performance present reports that are difficult to read, thus losing the trust and confidence of their investors. The researcher F. Li concludes that 'bad

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<sup>29</sup> **Soper**, F., Dolohin R, cited above

<sup>30</sup> **Barnett**, A., Leoffler, K., cited above

<sup>31</sup> **Adelberg**, A. Narrative disclosures contained in financial statements: means of communication or manipulation? // *Accounting and Business Research*, Vol. 9 No. 35, 1979, p. 179-189.

<sup>32</sup> **Jones**, M. A longitudinal study of the readability of the chairman's narratives in the corporate statements of a UK company. // *Accounting and Business Research*, Vol. 18 No. 72, 1988, p. 297-305.

<sup>33</sup> **Baker**, H., Kare, D. Relationship between annual statement readability and corporate financial performance. // *Management Research News*, Vol. 15 No. 2, 1992, p. 1-4.

<sup>34</sup> **Smith**, M., Taffler, R. The chairman's statement and corporate financial performance. // *Accounting and Finance*, Vol. 32 No. 2, 1992a, p. 75-90.

<sup>35</sup> **Subramanian**, R., Insley, R., Blackwell, R. Performance and readability: a comparison of annual statements of profitable and unprofitable corporations. // *The Journal of Business Communication*, Vol. 30, No. 1, 1993, p. 49-61.

<sup>36</sup> **Li**, F. Annual statement readability, current earnings, and earnings persistence. // *Journal of Accounting and Economics* 45, 2008, p. 221–247.

news by its nature is more difficult to present and requires a more complicated language<sup>37</sup>.

Bulgarian specialist literature also supports the thesis that the managers of enterprises manipulate the information in financial statements by deliberately complicating it<sup>38</sup>. A good example is one of the biggest corporate bankruptcies in the history of the USA for the last decade – the bankruptcy of the energy company, the Enron Corporation. In his commentary, congressman John Dingell states that the announced financial statements of the company are, 'exceptionally complicated', so that the managers did not have to lie about its financial situation. 'It was sufficient to create confusion solely by overcomplicating them – although they more likely lied about it'.

M. Hossain and M. Siddiquee<sup>39</sup> reach mixed conclusions by finding weak evidence that the performance of the companies, measured by return on assets and readability, describe joint actions. The authors argue that the companies, which achieved both good and bad results, present their disclosures with a high readability difficulty.

Other researchers reach opposite conclusions due to not finding a correlation between the readability quality of the disclosures and the reported results by the companies (J. Courtis<sup>40</sup>; B. Rutherford<sup>41</sup>; M. Smith, A. Jamil, Y. Johari and S. Ahmad<sup>42</sup>). According to them, there is weak (even non-existent) evidence for the existence of a 'hypothesis of obfuscation', and they suggest that this could be due to the difficulty of

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<sup>37</sup> Li, F. cited above

<sup>38</sup> Ref. Petrova, R. cited above, p. 29.

<sup>39</sup> Hossain, M., Siddiquee, M. Readability of Management Reviews in the Annual Statements of Listed Companies of Bangladesh, <http://www.ssrn.com>

<sup>40</sup> Courtis, J. An investigation into annual statement readability and corporate riskreturn relationships. // Accounting and Business Research, Vol. 16, No. 64, 1986, p. 285-294.

Courtis, J. Readability of annual statements: Western versus Asian evidence.// Accounting, Auditing & Accountability Journal, Vol. 8, No. 2, 1995, p. 4-17.

<sup>41</sup> Rutherford, B. Obfuscation, textual complexity and the role of regulated narrative accounting disclosure in corporate governance. // Journal of Management and Governance, Vol. 7, No. 2, 2003, p. 187-210.

<sup>42</sup> Smith, M., Jamil, A., Johari Y., Ahmad, S. The chairman's statement in Malaysian companies: A test of the obfuscation hypothesis. // Asian Review of Accounting, Vol. 14, Iss ½, 2006, p. 49 – 65.

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being identified and assessed. The complexity of the disclosures, according to some researchers, could be due to the complexity of the activities of the enterprises. According to others, the sector of activities of the respective companies does not affect the readability of the documents significantly, nor is the profitability linked to the levels of intelligibility of the texts<sup>43</sup>.

The authors M. Smith, A. Jamil, Y. Johari and S. Ahmad conclude that there is a significant correlation between the corporate language used and the financial achievements, but they are not in accordance with the 'hypothesis of obfuscation'. Furthermore, the results of their research confirm that the improvement in the readability of disclosures is directly connected with increased regulation and mandatory monitoring.

The scarce amount of research studying the analysis of the language used in financial disclosures testify to the contradictory results on the topic. The reason for this are perhaps the different approaches applied for measuring of readability, which focus on the use of mathematical formulas, most of which record the sentence length or the number of syllables. Moreover, we have to take into account the fact that the formulas for readability assess and present a result for the probable difficulty of understanding the text by the readers.

The methodology of readability is criticised because it originates from literary psychology where it is mainly used to assess texts for children. Various authors acknowledge the limitations of the formulas used, as well as their application in the financial disclosures. The latter affects their validity.

Although several decades have passed and despite the few studies on the subject, there is still no definitive conclusion with reference to the effect of achieved results on the readability of the financial statements. It is an interesting fact that previous studies have focused on specific aspects of the issue. There is a lack of global (overall) studies, which could give a better and comprehensive view on the matter. The realisation of the latter is exceptionally difficult, in comparable aspects, where each of these small studies can contribute to clarification of separate aspects of the discussed issue.

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<sup>43</sup> **Courtis**, J. Cited above

### ***Conclusion***

Nowadays, due to the rapid development in readability formulas, they are becoming increasingly popular and there is a multitude of metrics. Despite the contradictions and limitations, the intelligibility metrics have existed for more than 80 years and provide an “average” evaluation of the level of difficulty of written information. In general, these formulas are quantitative approaches for measuring only the textual and linguistic factors, and cannot include qualitative ones as the latter are hard to be measured and depend on a series of other personal (of the reader) characteristics. On the other hand, the qualitative approach is highly subjective and thus, it is difficult to make an exact summary of the analysis.

The arguments presented in this article support the need for combining the achievements of both the quantitative and qualitative approach and the creation of a new trend, where the formulas for readability should be used as an initial assessment, which should be complemented by an assessment of individual subjective characteristics. Thus, printed texts will be analysed in a more comprehensive way, referring to two aspects – the specifics of the text and the personal qualities of the reader. Therefore, this new approach will lead to more productive results in future studies and to an increase in the comprehensibility of written information.

The problems with effective and transparent communication between the suppliers and consumers of corporate information continues to be a hot topic today in spite of the experience and the strict legal regulation. The relationship between the readability of disclosures and the performance of an enterprise still remains empirically unproved. Despite the contradictions, we can accept the hypothesis that there is a connection, maybe more explicit with some and more hidden with other enterprises, between the performance and the level of intelligibility of the information presented. It is necessary that the new complex approach be applied in future studies, and the subsequent results be compared with indicators measuring the future performance of the enterprise.

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### APPENDIXE

*Table 1.*  
*Scientific research studying the readability of disclosures*<sup>44</sup>

Author	Year	Sample survey	Subject of study	Indicators of performance of enterprise	Measure of readability	Conclusions
<b><i>Readability of texts in disclosures of enterprises</i></b>						
S. Pashalian W. Crissy	1950	26 reports	Annual reports	-	Flesch	Disclosures are hard to understand for 75% of the adult population of USA
F. Soper R. Dolphin	1964	25 reports	Annual reports	-	Flesch	The level of text difficulty decreases
M. Still	1972	50 enterprises (1971)	Reports of the management	-	Flesch	The disclosures are hard to understand for a great percentage of the British population
A. Barnett K. Leofflet	1979	50 enterprises (1975 and 1969)	Notes, audit reports	-	Flesch	The level of text difficulty decreases
<b><i>Effect of the performance on the readability of disclosures of enterprises</i></b>						
A. Adelberg	1979	16 reports	Annual report on operation, notes and audit report	Change in earnings per share (EPS)	Cloze procedure	Tendency towards 'obscuring' of some parts of the disclosures
J. Courtis	1986	46 and 96 reports	Letters to the shareholders Notes to Annual Financial report	Current ratios, leverage, volatility of earnings, return on assets (ROA)	Flesch and Fog	Without obfuscation <sup>45</sup>
M. Jones	1988	1 enterprise, 32 financial years	Letters to shareholders	Net profit to sales ratio, ROCE	Flesch	Tendency for obfuscation

<sup>44</sup> Adapted and complemented by Stellner, B. Readability of Quarterly Statements: Do companies mislead investors?// Anchor Academic Publishing, 2014, p. 37-38.

<sup>45</sup> A text written with intended difficulty, so that it can conceal unfavourable information.



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H. Baker D. Kane	1992	44 reports	Letters to shareholders	Assets, ordinary shares, return on equity (ROE), profitability of revenues	Flesch	Tendency for obfuscation
M. Smith R. Taffler	1992	66 reports	Letters to shareholders	Successful and unsuccessful enterprises, revenue, liquidity, risk	Flesch and Lix	Tendency for obfuscation
R. Subramanian R. Insley R. Blackwell	1993	60 reports	Letters to shareholders	Improved or worsened profitability	Flesch-Kincaid	Tendency for obfuscation
J. Courtis	1995	32 reports (64 – financial years)	Letters to shareholders Notes to AFR	Return on investment (ROI)	Flesch, Fog and Lix	Tendency for obfuscation
B. Rutherford	2003	419 reports	Operational and financial reports	Turnover, operating profit, profit margin, return on capital employed (ROCE), ROE, increase/decrease in earnings per share	Flesch	Tendency for obfuscation
M. Smith A, Jamil Y. Johari S. Ahmad	2006	513 reports	Letters to shareholders	Profit, liquidity indicators	Flesh and BCI	Tendency for obfuscation
F. Li	2008	55719 reports (1993-2003)	Annual report on operation, notes to AFR	Current profit, persistence of profit	Fog and volume of disclosures	Tendency for obfuscation
M. Hossain M. Siddiquee	2008	139 enterprises	Annual report on operation	ROA	Flesch and volume of disclosures	Limited tendency for obfuscation

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