

SENTIMENT ANALYSIS OF CORPORATE SOCIAL RESPONSIBILITY DISCLOSURE IN ANNUAL REPORT FROM BANKING SECTOR COMPANIES IN INDONESIA

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Abstract

This study examines the tone of language in CSR disclosure and investigates the determinants of these sentiments. This study analyzes 418 CSR disclosures of banking companies listed on the Indonesia Stock Exchange from 2010 to 2021. This research is a quantitative research. The tools used in this research to analyze sentiment is Python. Then, the variables processed using Stata 15. The results show that the sentiment of CSR disclosures is correlated significantly with the company size. The larger companies tend to use sentiment in their CSR reports. Additional test of this study shows Covid-19 has a significant positive effect on CSR disclosure sentiment. Leverage and government ownership have a negative impact on the sentiment of CSR disclosure. Meanwhile, profitability and family ownership do not affect the sentiment of CSR disclosure. This research contributes to stakeholders in making comprehensive decisions related to corporate accountability.

Keywords: *corporate social responsibility disclosure; sustainability reports; sentiment analysis; banking sector*

Introduction

Although research on the disclosure of social and environmental responsibility has existed since the 1980s (Wiseman, 1982), the attention of researchers and practitioners continues to grow on this topic. Specifically, the reason why some companies choose to behave more responsibly even though there are no legal requirements (Vogel, 2005). In Indonesia, regulations related to CSR have been regulated in Law Number 40 of 2007 concerning Limited Liability Companies and Government Regulation Number 47 of 2012 concerning Social and Environmental Responsibility of Limited Liability Companies (Fatriani & Utama, 2020). Although it is regulated by law, the scope is only defined in general terms, and much freedom is left to management to publish reports (Andrini, 2016). These things provide an opportunity for managers to use their discretion in the preparation of CSR reports. Managers can choose the content, the level of complexity, communicate subjective opinions, expectations, and tone of manager disclosure in CSR reports. (Davis & Tama-Sweet, 2012). The tone of corporate disclosure can represent the feelings and opinions of managers. Previous research has found the use of tone of corporate disclosure (Marquez-Illescas, Zebedee, &

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Zhou, 2019). The tone of financial disclosure can increase short-term stock returns and reduce stock return volatility (Kothari et al., 2009). A more positive tone of disclosure is also associated with lower engagement risk and audit fees (Bicudo de Castro et al., 2019). Stakeholders in the capital market can use the tone of financial disclosures to infer managers' personal information about prospects (Feng, 2010), risk (Smith & Taffler, 2000), firm value (Bonsón et al., 2021), firm's financial performance (Henry, 2008) because the tone of management disclosure is related to the company's financial and operational fundamentals, such as firm size (Feng, 2010), financial performance (Smith & Taffler, 2000; Bonsón et al., 2021).

Descriptive research has been conducted on the development of CSR research and it was found that the most widely used variable associated with CSR was financial performance (Gunawan & SeTin, 2018). Several researchers have proven that CSR has a positive association to financial performance such as return on assets (Li, 2012; Park, 2017). In the view of signaling theory, the managers tend to give signal to investors regarding the company information and prospects (Thorne et al., 2014). Managers can use a positive tone of disclosure to signal investors regarding good financial performance (Feng, 2010; Mucko, 2021). This signal is expected to be received positively by the market so that it can affect market performance (Ihsani, Firmansyah, & Estutik, 2021). This signal is also expected to reduce information asymmetry between managers and stakeholders (Jamali et al., 2008) and positively signal investors that their firms have superior capabilities for filling institutional voids (Su et al., 2016).

Another view related to the disclosure of information by companies is explained by opportunistic behavior theory (Wang, Yin, Deng, & Xu, 2021). Managers can use social responsibility activities as a tool to cover up corporate financial fraud (Hemingway & Maclagan, 2004). It is in line with the homo economicus model, where self-interest is the exclusive driver of the action (Friedland & Cole, 2019). In this view, people in business act exclusively for their economic interests because self-interest is assumed to dominate all other motives (Melé et al., 2014). Management's opportunistic behavior can also be in the form of obscure bad results or exaggerate good news to improve its image (Mucko, 2021). In other words, managers can use a more positive tone of disclosure or less negative tone to cover up poor financial performance.

CSR disclosure brings special analytical difficulties because it is presented in a textual form. Sentiment analysis can be used to determine managerial wisdom, including emotion and sentiment on CSR disclosure. Sentiment analysis will find the feelings, sentiments, and intelligence of a writer or speaker in several different specific texts (Kaur & Gupta, 2013). By using sentiment analysis, this study will determine the manager's sentiment on CSR disclosure and its relationship to the company's financial performance, whether managers use a more positive tone when financial performance enhances (signaling theory) or reduce a negative tone when financial performance is poor (opportunistic behavior). This research is a replication and development of previous studies (Mucko, 2021) which evaluates the sentiment of CSR disclosure of European Union companies. The differences are:

1) This study uses a different sample from previous research, namely the sample of this study are banking companies listed on the Indonesia Stock Exchange. The banking sector carries out activities that are expected not to cause environmental damage so that the bank's decision to undertake CSR projects can be considered voluntary (Hermawan & Gunardi, 2019). It is interesting to investigate the motives of managers investing in CSR projects to understand how they perceive CSR as beneficial to banking institutions(Hermawan & Gunardi, 2019).

2) This research is different from previous research by adding independent variables, namely, Covid-19, Government Ownership, and Family Ownership and a control variable in the form of Leverage.

3) This study uses an observation period of 2010-2021 which is different from previous research(Yuan, Chang, Chen, & Li, 2021). This study begins the research period from 2010 considering that in 2010 the Indonesian economy began to rise from the crisis the US subprime mortgage crisis which also affected the economy in Indonesia in 2008. The years 2020 and 2021 are the observation periods during the Covid-19 pandemic, while 2010 to 2019 are observation periods before the Covid-19 pandemic occurs(Aubert et al., 2021).

4) The tool used to analyze sentiment in this research is the Python programming language(Kaur & Sharma, 2020). Python is superior to other Programming Languages that exist today (Kumar & Aouam, 2018) and research that discusses sentiment analysis of CSR disclosure using Python has not been widely discussed in previous studies.

While the issue has been previously examined, this study may provide a new set of insights(Kniffin et al., 2021). The results may differ from previous studies because the quality of CSR disclosure in Indonesia is inadequate. Previous research has proven that Indonesia only presents CSR disclosure of 48.4%, which is below the average level of CSR disclosure in ASEAN countries (Loh et al., 2016). Other studies also show that the level of competitiveness of Indonesian businesses is still low. Indonesia is ranked 48th among 61 countries (IMD, 2016). Companies with low business competitiveness, such as Indonesia, tend to cover up excess information from outsiders to avoid government and investor scrutiny (Kothari et al., 2009). It results in a low level of transparency and information asymmetry problems(Tohang, Limijaya, & Chitrahadi, 2020). This condition can encourage CSR disclosure become a practice to cover the decline in the company's reputation. Consequently, evidence generated from this study will be very important as it shows the relationship between financial performance and CSR disclosure in the unique setting of Indonesia, as explained above.

This study aims to analyze the sentiment of CSR disclosure in banking companies and examine the factors that influence the sentiment of CSR disclosure in banking companies listed on the Indonesia Stock Exchange(Widyasari & Ayunda, 2020). This research may be useful for banking companies as a reference for management to pay attention to sentiment in non-financial reports. This research is also useful for investors to consider the tone of management's disclosures and the variables

that affect the tone of this disclosure so that investors can make the best decisions(Luo & Zhou, 2020). Finally, this research adds new insight related to research on sentiment of corporate disclosure, especially for companies in Indonesia.

Research Method

The type of research used in this study is quantitative research using correlational methods which are useful for analyzing how variables affect other variables through hypothesis testing.

Population and samples

The population of this study is banking companies listed on the Indonesia Stock Exchange from 2010 to 2021(Siahaan, Silalahi, Syahyunan, & Sianipar, 2021). The sample of this study consists of 418 annual reports of banking companies listed on the Indonesia Stock Exchange from 2010 to 2021. Table 1 shows the sample selection of this study. Companies that were excluded from this study were companies that only had annual reports in Indonesian because the dictionary used for sentiment analysis in this study was presented in English. This study chose the banking sector as a research framework not arbitrarily.

Table 1. The Sample Selection of Study

Criteria of Targeted Sample	Number of Firm
Banking companies listed on the IDX during the period 2010-2021	564
Banking companies whose data are incomplete	87
Banking companies whose CSR reports are in Indonesian	59
Number of observations	418

The data is taken from audited financial reports, CSR reports and sustainability reports (if available) from the official website of the Indonesia Stock Exchange.

In this study, the method applied to analyze sentiment is a rule-based approach(Berka, 2020). This approach analyzes words with a predetermined set of rules or dictionaries to evaluate the sentiment of each disclosure. This study uses SentiWordNet 3.0 as a set of rules or a dictionary containing a list of keywords and terms that contain positive and negative sentiments. Before conducting sentiment analysis, preprocessing data on CSR reports is carried out(Deng, Hine, Ji, & Sur, 2019). Data preprocessing in this study consists of four main steps:

- (a) separate CSR disclosure reports from annual reports.
- (b) separate English words and Indonesian because the language that will be used in analyzing sentiment with Sentiwordnet 3.0 is English.
- (c) data cleansing. This step would remove special characters (emoji, symbol, period, comma), stopwords, extra spaces and numbers.
- (d) tokenization and case conversion. This step would parse the sentences, paragraphs, or documents into smaller parts, called tokens or independent words. Subsequently, all token would be converted into the lower case to eliminate the difference between lower case and capital case.

This study uses Python as a tool to analyze sentiment(Nausheen & Begum, 2018). The output of Python is the number of positive words, the number of negative words and the total number of words in disclosure.

Results and Discussion

Statistical descriptive

Table shows the descriptive statistics of 418 CSR reports from banking companies. Sentiments are divided into two categories, namely positive sentiment and negative sentiment. The average value of positive sentiment is 673.7249 words, while the average value for negative sentiments is 417.2919 words. It shows that there are around 673 positive words that represent positive opinions or positive sentiments and 417 negative words that represent negative opinions or negative sentiments.

Table 2. Descriptive statistics

Sentiment	N	Mean	Std. Dev.	Min	Max
Positive	418	673.7249	1934.44	4	30385
Negative	418	417.2919	1180.262	3	18802

The NWORDS variable has a significant value of 0.7270 on positive sentiment, where this value is greater than 0.05 so that the NWORDS variable does not affect the positive sentiment of CSR disclosure. While on negative sentiment, the NWORDS variable has a significant value of 0.201, where this value is greater than 0.05 so that NWORDS does not affect the negative sentiment of CSR disclosure. The number of words in the CSR report does not affect the sentiment of CSR disclosure, both in positive and negative(Clarkson et al., 2020). This result can occur because the CSR report first goes through a data preprocessing process where the stopwords that generate confusion and not adding information - such as, is, at, where, and, at, etc. - are excluded in the preparation of the relevant vocabulary. Some words with no meaning have been

omitted in the preprocessing data, so the large number of words cannot ensure the number of sentiments (Aureli, 2017).

The SIZE variable has a significant value of 0.075 on positive sentiment, which is greater than 0.05, so the SIZE does not affect the positive sentiment of CSR disclosure. While for negative sentiment, the SIZE variable has a significant value of 0.016, which is smaller than 0.05, so SIZE significantly affects the negative sentiment of CSR disclosure. Based on the regression test of this study, it is shown that firm size (log total assets) significantly correlated with the negative sentiment of CSR disclosure. The results of this study are in line with Feng (2010) and Davis & Tama-Sweet (2012). Large companies tend to use and utilize sentiment management in CSR reports since large companies attract more social attention from stakeholders than small companies (W. Sun et al., 2018). Prior study has shown that the larger the company, the wider the social responsibility they have to assume (Fifianti & Prasetyono, 2019). In addition, large companies also have greater resources for CSR expenditure so that large companies tend to invest and disclose more in CSR projects (Naughton et al., 2014; Teoh & Wazzan, 1999). Larger companies tend to take advantages of the use of negative tones in their reports because they are more cautious in their disclosures due to political and legal concerns (Feng, 2010).

For the additional test, this study also examines the effect of family ownership on the sentiment of CSR disclosure in banking companies (Katmon, Mohamad, Norwani, & Farooque, 2019). Based on Table 5, the FAM variable has a significant value of 0.976 for positive sentiment, where this value is greater than 0.05 so that the FAM variable does not affect the positive sentiment of CSR disclosure. Meanwhile, in negative sentiment, the FAM variable has a significant value of 0.929, where this value is greater than 0.05 so that FAM does not affect the negative sentiment of CSR disclosure. The test of regression shows that family ownership in banking companies has no impact on CSR disclosure sentiment. Meanwhile, the interaction between ROA and FAM shows that poor performance in family-owned companies will increase the positive tone of CSR disclosure. It proves that family-owned companies lack incentives and motivation to disclose social and environmental policies to reduce information asymmetry among their shareholders (Safae & Gerayli, 2017; Lybaert, 2014; Alsaadi, 2021).

This study also examines the effect of government ownership on the sentiment of CSR disclosure in banking companies (Ji, Liu, Zhang, An, & Sun, 2020). Based on table 6, the GOV variable has a significant value of 0.011 on positive sentiment, which is smaller than 0.05, so the GOV variable has a significant effect on positive sentiment CSR disclosure. While for negative sentiment, the GOV variable has a significant value of 0.536, which is greater than 0.05 so GOV does not affect the negative sentiment of CSR disclosure. Government ownership has a significant influence on the sentiment of CSR disclosure. When the company's financial performance is poor, state-owned banks reduce the negative tone of disclosure on CSR reports to meet high expectations and social scrutiny. Managers at state-owned banks are more sensitive to social expectations and scrutiny than their counterparts in private companies (Sun et al., 2018). This research is in line with Amran & Devi (2007) and Ghazali (2007).

Conclusions

The purpose of this study is to determine the effect of profitability, family ownership, government ownership and Covid-19 on sentiment of CSR disclosure (Liu, Meng, Zhao, & Duan, 2020). The results confirm that profitability does not affect the sentiment of CSR disclosures, therefore H1a and H1b are rejected. This study also found that firm size (control variable) is positively correlated with the sentiment of CSR disclosure. The larger the company, the more likely it is to use sentiment in its CSR disclosures. Finally, this study found that the COVID-19 pandemic significantly positively affects CSR disclosure sentiment. Government ownership and leverage have a negative impact on the positive sentiment of CSR disclosure. Meanwhile, family ownership does not affect the sentiment of CSR disclosure.

This study offers the following implications and suggestions. The results show that banking profitability does not affect positive and negative sentiments on CSR disclosure. It shows that banking companies in Indonesia do not use disclosure sentiment to give a signal to investors or as management opportunistic behavior to fulfill their interests. Instead, it is solely to build and maintain the company's reputation and to meet government requirements. Government regulations related to CSR, which are still minimal, allow for loose interpretation and appreciation from the public. Therefore, this study invites policymakers to pay more attention to and supervise CSR regulations in Indonesia.

As technology and knowledge advance, companies are analyzing sentiment for various purposes. From the purpose of analyzing customer sentiment until recently, researchers widely used it to analyze formal reports. Companies are expected to improve the quality and reporting of CSR and consider the tone of CSR disclosure. The tone of the disclosure can affect how readers perceive information from reports

provided by management. This research can help investors consider sentiment management in CSR disclosure and make the right decisions regarding CSR disclosure reports. For further research, this study suggests more variables embedded in the research such as ROE and Net Profit Margin.

This study has several limitations. The sentiment analysis method of CSR disclosure uses a rule-based method, which has weaknesses. The simple dictionary-based approach does not take into consideration the context of a sentence (Feng, 2010). The simple rule-based approach only captures single words that contain positive and negative tones. Future research could use the Machine Learning Approach to analyze the tone based on the content of the report. Second, lexical sources or dictionaries used in this study are available in English. So companies that provide reports only in Indonesian are excluded from the sample of this study. The results of this study may be different if using lexical sources in Indonesian.

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