Examining The Effect of Sustainability Report Disclosure to Firm Value: A Study Based on Listed Public Companies in Indonesia Stock Exchange

Mulyana Chandra Hadiati[1*], Muhammad Brilian Wahyudyatmika[2]

[1] Department of Accounting, Faculty of Economics and Business, Universitas Mercu Buana, Jakarta, Indonesia, mulyana.chandra@mercubuana.ac.id

[2] Department of Accounting, Faculty of Economics and Business, Universitas Trisakti, Jakarta, Indonesia, 023002204001@std.trisakti.ac.id

*Corresponding Author: Mulyana Chandra Hadiati[1]

Abstract: Companies that mitigate and improve the environment can take advantage of this as a marketing tool in general. Consumers will support companies that have a positive impact on their surroundings. One of the tools that can be used as a form of responsibility and marketing tool is a sustainability report. Sustainability report are reports published by organizations or companies that explain the economic, environmental, and social impacts as result of their operating activities. The report also explains about corporate culture and governance as well as its relationship with the company's strategy and commitment to maintain the sustainability of the triple bottom line (people, planet, profit). Sustainability reporting disclosure index (SRDI) are measured from 89 listed public companies in Indonesia. Regression analysis took place for examining the effect of SRDI to the corresponding firm value represented by Tobin's Q. Only certain limited sample data showed that there's a significance effect between sustainability report disclosure and firm value. Enterprises who haven't disclose their sustainability report still worth high value in share trade. This condition occurs due to investors' decisions to invest are influenced by media coverage, economic conditions, and changes in stock prices.

Keywords: Sustainability Report, Public Company, Firm Value

INTRODUCTION

Environmental issues have become an increasingly important issue (Alvarez, 2018). Companies that mitigate and improve the environment can take advantage of this as a marketing tool in general. Consumers will support companies that have a positive impact on their surroundings. One of the tools that can be used as a form of responsibility and marketing tool is a sustainability report (Astara, et al., 2015).

Sustainability report (SR) are reports published by organizations or companies that explain the economic, environmental, and social impacts as result of their operating activities (Global Reporting Initiative, G4 Sustainability Reporting Guidelines, 2013). The report also explains about corporate culture and governance as well as its relationship with the company's strategy and commitment to maintain the sustainability of the triple bottom line (people, planet, profit). Over time, SR is considered increasingly important because financial statements alone are not enough to report company performance (Hidayah, et al., 2019; Nugroho, et al., 2019).

Several previous studies have discussed the effect of SR disclosure on firm value. Research conducted in Finland found a significant positive effect between sustainability report disclosure and firm value (Schadewitz & Niskala, 2010). Other studies conducted in Sri Lanka, Australia, Singapore, Korea, and Sweden also found similar findings (Swarnapali & Le, 2018; Bachoo, et al., 2013; Loh, et al., 2017; Lee, et al., 2019; Johansson & Zametica, 2019). However, couple research related to SR in Indonesia have shown different results. Latifah and Luhur (2017) in line with Nugroho and Arjowo (2014) revealed that in Indonesia, SR disclosure has a significant positive effect on firm value. On the other hand, Rizki, et al., (2019) concluded that SR has no significant effect on firm value.

The results discrepancy of this study is understandable considering that SR has just developed in Indonesia. Although the recommendations related to SR have been stated in UU No. 40 of 2007 concerning Limited Liability Companies and PSAK No. 1 (2015 revision) concerning the Presentation of Financial Statements (Ikatan Akuntan Indonesia, 2015), the rules that explicitly regulate the SR were only issued in 2017 through OJK Regulation No. 51/POJK.03/2017 concerning the Implementation of Sustainable Finance for Financial Services Institutions, Issuers and Public Companies. In this rule, it is explained regarding the management of the concept of sustainability in Indonesia.

Based on prior studies, firm value can be measured using Tobin's Q and SR disclosure can be reflected through the Sustainability Report Disclosure Index (SRDI). Tobin's Q is an indicator to measure company performance, especially about company value, which shows a management performance in managing company assets (Sudiyanto & Puspitasari, 2010). Tobin's Q is often used in research because it is considered a sufficient indicator to measure company value by involving market value (stock price) and company book value. Meanwhile, SRDI is the number of standards disclosed divided by the total standards in the GRI-G4/GRI Standards (Ching, 2014).

This study measured SRDI and Tobin's Q from 89 listed public companies in Indonesia. Regression analysis took place for examining the effect of SRDI to the corresponding Tobin's Q. In-depth interviews can also be conducted as an additional procedure to increase understanding regarding the effect of SR on firm value. It aims to gain perspective from things that have not been obtained from quantitative research.

LITERATURE REVIEW
Sustainability Report
Global Reporting Initiative (2019) defines SR as a report published by an organization or company that describes the economic, environmental and social impacts of its operating activities. SR also explained about corporate culture and governance as well as its relationship with the company's strategy and commitment to maintain the sustainability of the triple bottom line (people, planet, profit). According to OJK Regulation No. 51/POJK.03/2017 concerning the Implementation of Sustainable Finance for Financial Service Institutions, Issuers and Public Companies, SR is a report announced to the public that contains economic, financial, social, and environmental aspects of a financial service institution, issuers, and public companies in running a sustainable business. In UU No. 40 of 2007, SR is defined by the term report on the

implementation of social and environmental responsibility. SR is one of the efforts to achieve Sustainable Development Goals (SDGs) by integrating business and companies in the process (United Nation Global Compact, 2013).

SR, according to Pricewaterhouse Coopers (2019), is useful for explaining the company's commitment to the sustainability aspect, explaining the company's goals, and explaining the sustainability business strategy to the public. SR can also be used by companies to understand the risks and externalities of their business and attract more investors (The Association of Chartered Certified Accountants, 2013). When companies adopt triple bottom line reporting, companies need to think about the impact of their operations on society (Arowoshegbe & Emmanuel, 2016). Therefore, companies must adjust their operating standards in order to maintain a balance of social, environmental, and economic aspects (people, planet, profit).

In sustainability reporting, the standards are regulated and set by authorized institutions including the Global Reporting Initiative (GRI), World Resources Institute (WRI), World Business Council for Sustainable Development (WBCSD), and Sustainable Accounting Standards Board (SASB) (Radin, 2019). The establishment of institutions engaged in sustainability reporting has provided various standards governing SR, including the following.
1) GRI Sustainability Reporting Framework by GRI,
2) GHG Emission Standard by WRI and WBCSD,
3) The UN Sustainable Development Goals (SDG2030) by United Nations, and
4) SASB Standard by SASB.

Regarding to the standard used for disclosing SR, companies may refer to more than one standard (Radin, 2019).

Among various existing standards, the GRI Sustainability Reporting Framework is the most widely used by companies with more than two-thirds of users in the world (KPMG, 2017; Ernst&Young & Boston College, 2016). GRI itself is a non-profit organization founded in Boston in 1997 which originally came from a coalition between the Coalition for Environmentally Responsible Economies (CERES) and the Tellus Institute. Throughout its journey, GRI has issued the GRI Sustainability Reporting Framework in the form of GRI G1 (2000), GRI G2 (2002), GRI G3 (2006), GRI G3. I (2011), GRI G4 (2013), and GRI Standard (2016) (Global Reporting Initiative, 2018).

Literature review in an arrangement of scientific papers can be interpreted as an affirmation of the limitations of scientific work. The digest in this section is contained in full in the keyoword in the abstract section. Therefore the preparation of any written works must be obliged to make a literature study.

Sustainability Reporting Disclosure Index

Measurement and assessment of SR disclosure can be conducted using the Sustainability Report Disclosure Index (SRDI). SRDI is the number of standards disclosed divided by the total GRI standards used (Ching, 2014). In the research range 2016-2018, there are two GRI standards that may be used by companies: GRI-G4 Guideliness and GRI-Standard 2016 or 2018. The details of the disclosure items of the those standards are as follows.

Table 1. GRI Disclosure Items

Disclosure Items	GRI-G4 Guideliness 2016	GRI-Standard 2016	GRI-Standard 2018
Reporting foundation	-	1 item	1 item
General aspects	58 items	56 items	56 items
Aspects of management approach	1 item	3 items	3 items
Economic aspect	9 items	13 items	13 items

Environmental aspects	34 items	29 items	32 items
Aspek sosial	48 items	34 items	40 items
Total Item	**150 items**	**136 items**	**145 items**

Source: (Global Reporting Initiative, 2013)

SRDI is calculated by assigning a score of 1 for each item disclosed and assigning a score of 0 for items that are not disclosed (Ching, 2014). The results of calculating the score will be accumulated and then divided by the total items in the standard used. The output of SRDI is the SR disclosure ratio from the range from 0 to 1 (from 0% - 100%). SRDI is formulated as follows.

$$SRDI = \frac{Total\ Disclosure\ Score}{Maximum\ Score}$$

Firm Value

Firm value is the investor's perception of the level of success of the company which is often associated with stock prices (Indrarini, et al., 2019). Stock prices reflect the special assessment of all market participants on the value of the company. High stock prices make the company value high. High company value increases market confidence in the company's performance both now and in the future.

Lonkani (2018) explains that the value of the company can be observed from the traditional view (traditional view) and the current view (the views of current dates). The traditional view holds that firm value can be increased by maximizing shareholder value. This view refers to the concept of shareholder theory which emphasizes that shareholders are the most important group for the company. Therefore, the company should mobilize its resources in the interests of shareholders as indicated by high profits or an adequate rate of return on investment.

In its development, the traditional view has received a lot of criticism from various parties because it is considered irrelevant to the current business environment. The current view states that stakeholders are not limited to shareholders. Therefore, the concept of shareholder should shift to stakeholder. The shift from the traditional view to the current view is marked by two things. First, the value of the company is not only related to the relationship with shareholders and creditors, but also concerns the relationship with all stakeholders. Second, the value of the company is not only accepted by shareholders, but also by all stakeholders. The current view emphasizes that firm value can be increased by maximizing stakeholder value. In its application, concepts such as CSR, triple bottom line, and sustainability continue to be developed to meet these goals (Lonkani, 2018).

Tobin's Q

Tobin's Q is a ratio popularized by a Nobel laureate in economics, James Tobin of Yale University. Although Tobin is credited with inventing it, this ratio was first proposed by Nicholas Kaldor in 1966. Therefore, it is sometimes referred to as Kaldor's V (Hayes, 2021).

Tobin's Q is the ratio of the market value of the company's assets as measured by the market value of the number of shares outstanding and debt (enterprise value) to the replacement cost of the company's assets (Fiakas, 2005). Tobin's Q is often used in research because it is considered a fairly good indicator in describing company performance. Tobin's Q is also widely used in financial research, especially those related to firm value (Sudiyanto & Puspitasari, 2010). Tobin's Q score shows three aspects: the condition of the company's shares (undervalued, average, or overvalued), management's ability to manage company assets, and investment growth potential (Sudiyanto & Puspitasari, 2010). The interpretation of Tobin's Q score is as follows.

Table 2: Tobin's Q Score Interpretation

Tobin's Q Score	Interpretation
Tobin's Q < 1	Undervalued stock conditions, management failed to manage assets, and low investment growth potential.
Tobin's Q = 1	Average stock conditions, stagnant management in managing assets, and investment growth potential is not growing.
Tobin's Q > 1	The stock is overvalued, the management is successful in managing assets, and the investment growth potential is high.

Source: (Sudiyanto & Puspitasari, 2010)

Formulation for counting Tobin's Q are as follows.

$$Tobin's\ Q = \frac{(EMV + D)}{(EBV + D)}$$

Whereas:
EMV   = Equity market value (EMV = closing price x outstanding share)
D   = Book value of liabilities
EBV   = Equity book value

Hypothesis Formulation

Every company carries out its activities in order to achieve the company's goal of maximizing company value. According to Lonkani (2018), the value of the company in the traditional view can be achieved by maximizing shareholder value, which means that the company must provide optimal profits to increase its value. In terms of achieving its goal, companies often exploit existing resources to the detriment of stakeholders. Currently, the impacts caused by these activities are increasingly damaging such as air pollution, water pollution, deforestation, to global warming.

Freeman (2010) stated that the concept of shareholders must be changed to stakeholders. Companies must know that this business is not only determined by shareholders but also parties who are directly or indirectly related to the company such as consumers, suppliers, creditors, the public and others. Legitimacy theory states that if the company wants its business to last long, the company must also implement values that are in accordance with its environment. Therefore, the current view assumes that company value can be achieved by maximizing stakeholder value (Lonkani, 2018).

To meet the wishes of various stakeholders, companies must consider various aspects of their activities. The Triple Bottom Line (TBL) concept states that economic, social, and environmental aspects must be the main focus of the company. Stakeholders not only assess how much profit is generated but also how much the company contributes to social and environmental aspects. The most common way is to implement Corporate Social Responsibility (CSR) as a form of corporate social responsibility towards the environment. This CSR is then published through sustainability reports (SR), annual reports (AR), print media, electronic media, and so on. This aims to reduce information asymmetry with stakeholders and to provide a positive signal that is expected to improve the company's image.

Previous research conducted in Finland, Sri Lanka, Australia, Singapore, Korea, and Sweden showed a significant positive effect between SR disclosure and firm value (Schadewitz & Niskala, 2010; Swarnapali & Le, 2018; Bachoo, et al., 2013; Loh, et al., 2017; Lee, et al., 2019; Johansson & Zametica, 2019). This means that the disclosure of SR can increase firm value. Further Lee, et al., (2019) explains that in Korea conglomerate companies are more likely to disclose SR. However, this disclosure provides little added value to the company because investors consider SR as an effective way to cover window dressing. Meanwhile in Sweden,

Johansson & Zametica (2019) only found a significant positive effect in 2015 only. For 2016 – 2017, there was no significant effect between SR and firm value.

In Indonesia, Latifah & Luhur (2017) in line with Nugroho & Arjowo (2014) reveal that SR has a significant positive effect on firm value. On the other hand, Rizki, et al. (2019) revealed that SR has no significant effect on firm value. Meanwhile, according to Tarigan & Semuel (2014), in SR, the economic dimension does not have a significant effect on financial performance, while the social and environmental dimensions have a significant negative effect on financial performance. This shows that in Indonesia the significance of SR is still being debated.

In many studies, SR also has a significant positive effect on firm value. Therefore, the researcher predicts that this study will explain the significant influence between SR disclosure and firm value. The framework of thinking is described in the following scheme.

Hypothesis 1 (H$_1$). *SR disclosure significantly influence the firm value*.

Source: Picture of Research
Picture 1. Research Hypotheses


RESEARCH METHODS
Sample and Source of Data

The data source for this study were obtained from the results of literature studies and documentation techniques. The main data were obtained from the IDX website and the respective company websites. For other data obtained from legislation, academic journals, articles, reference books and other sources that can support research.

The sample selection in this study used a purposive sampling method whose selection was based on certain considerations. The criteria for selecting the sample are as follows:
1) Within 100 public companies (Tbk.) with the largest market capitalization value in Indonesia as of December 31, 2019.
2) Has been listed on the Indonesia Stock Exchange (IDX) as of 2016, and
3) Equity is not negative.

Based on type of businesses, 89 samples are categorized to nine business sectors listed on the Indonesia Stock Exchange (IDX). Most of the samples are in the finance sector with 21 companies (23.60%) and the least are in the miscellaneous industry sector with only 1 company (1.12%) Astra International Tbk. The samples' type of business is as the figure below.
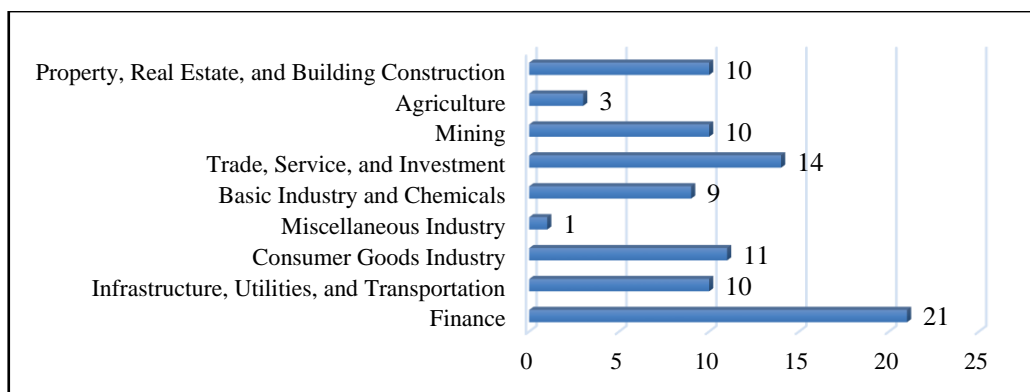
Source: Processed from Indonesia Stock Exchange Data
**Picture 2. 89 Samples' Type of Business.**

For the 25 selected samples, Figure 3 explains that the finance sector still dominates with 8 companies (32%). Meanwhile, the least number of companies are in the miscellaneous industry and agriculture sector with 1 company each: Astra International Tbk. and Astra Agro Lestari Tbk. In these 25 samples, there is no consumer goods industry sector.
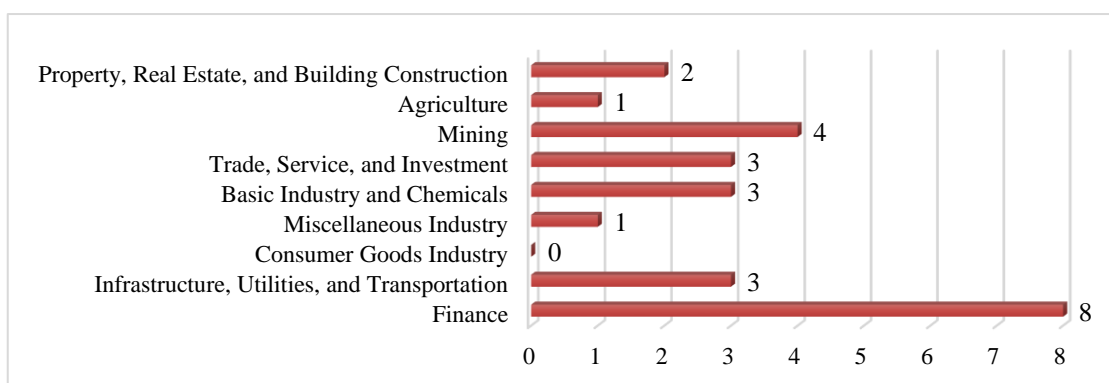
Source: Processed from Indonesia Stock Exchange Data
Picture 3. 25 Samples' Type of Business.

Based on the firm value, figure 4 shows the average value of 89 companies from 2016-2018 as measured using Tobin's Q. In 2016 the average company value was 2.42. In 2017 there was a decrease of 0.6 so that the average value fell to 2.36. In 2018 there was a larger decline of 0.15 so that the average value fell to 2.21.
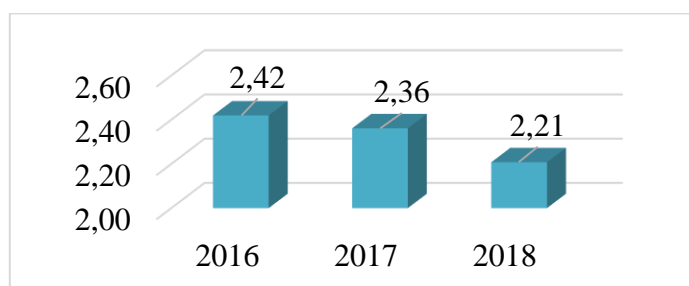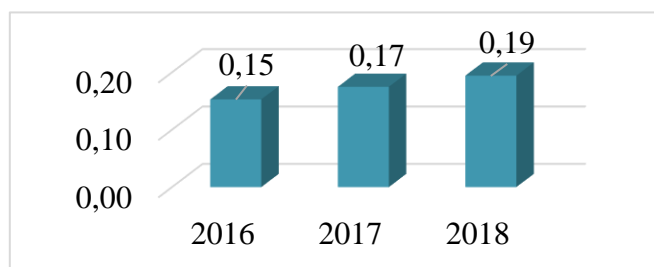

Source: Processed from Indonesia Stock Exchange Data
Picture 4. Average Firm Value Counted using Tobin's Q.

Based on sustainability report disclosure index (SRDI), figure 5 shows the average SRDI of the 89 selected companies. In 2016 the average SRDI was 0.15 (15%). This shows

that the average company discloses 15% of items from all standard items. In 2017 the average HRDI increased by 0.02 (2%) so that the average was 0.17 (17%). In 2018 the average HRDI increased by 0.02 (2%) so that the average was 0.19 (19%). It shows that from year to year the disclosure of items in sustainability reports continues to increase.

Source: Processed from Indonesia Stock Exchange Data
Picture 5: Average of SRDI Score

Variable's Operational Definition and Measurement

This study uses two types of variables: dependent variable and independent variable. The dependent variable is the firm value which is measured by Tobin's Q. The independent variable is the SR disclosure that quantified using Sustainability Report Disclosure Index (SRDI).

Methodology

In this study, descriptive statistic Pearson's correlation coefficient is employed to measure the relationship between SR disclosure and firm value. The correlation coefficient is used to measure the strength of the linear correlation between the independent variable and the dependent variable in the sample (Triola, 2011). The R value varies from -1 to 1. The closer to 1 or -1, the stronger the correlation between the variables, while the (+) or (-) sign indicates a unidirectional or non-unidirectional relationship between the variables. The value of R can be calculated by rooting the coefficient of determination (R square or R2).

To determine the effect of sustainability disclosure on firm value through predetermined variables, the analytical method used is regression analysis method for panel data using Eviews 10. Panel data has several advantages compared to data that only consists of time series or cross-sections as follows (Gujarati, 2003).
1) Panel data provides data that is more informative, more varied, low level of collinearity between variables, greater degree of freedom, and more efficient.
2) By analyzing cross-sectional data over several periods, panel data is appropriate for use in dynamic change research.
3) Panel data is able to detect and measure unobservable effects through pure time series or cross section data.
4) Panel data makes it possible to study more complex behavioral models.
5) Panel data is heterogeneous because it consists of several individuals in a time span. Techniques for estimating panel data can include explicit heterogeneity for each specific individual variable.

Modeling using panel data regression techniques can be done with three approaches. Those are the common effect model (pooled least square), the fixed effect (FE) model, and the random effect (RE) model. The common effect model is the simplest model where the approach ignores the time and space dimensions possessed by panel data so that it is assumed that the behavior of data between companies is the same in various time periods (Ghozali & Ratmono, 2018). This assumption is quite far from the reality because the characteristics between companies and between times are clearly different. The method used

to estimate the common effect approach is the ordinary least square method (simple regression) so it is often called the pooled least square model.

This study does not use the common effect model because it is considered to ignore variations between individuals or between time. For this reason, the fixed effect (FE) model will be used. Gujarati (2003) explains that the selection of the fixed effect model can be done through the following considerations.

The fixed effect (FE) model is a model that shows differences in intercepts between individuals that do not vary over time (Ghozali & Ratmono, 2018). This model assumes that the regression coefficient (slope) remains between individuals and over time (Widarjono, 2006). In simple terms, the fixed effect model pays attention to inter-individual characteristics but ignores inter-time characteristics. These characteristics such as managerial styles or managerial philosophies that differ between companies (Ghozali & Ratmono, 2018). As a result, the intercept differs between companies but is the same over time. The fixed effect approach uses a dummy variable to estimate the intercept for each individual. Therefore, the fixed effect model is also called the least-square dummy variable (LSDV) regression model. The weakness of this model is that it can reduce the degree of freedom so that it can reduce the efficiency of the parameters.

In this study, the independent variable is sustainability disclosure index (SRDI) and the dependent variable is Tobin's Q. This study suspects that the value of the company (Tobin's Q) is influenced by the level of disclosure of the sustainability report (SRDI). However, there are other factors that affect firm value (Tobin's Q) which were not examined. The panel data regression model with a fixed effect approach in this study is as follows.

$$Q = \beta_0 + \beta_1 SRDI + \varepsilon_i$$

Whereas:
Q = Tobin's Q that measures firm value.
$SRDI$ = Sustainability Report Disclosure Index.
β_0 = A constant that varies within the individuals but does not vary within time.
β_1 = Regression coefficient/slope.
ε_i = Error term.

The t-statistical test shows how far the influence of one independent variable on the dependent variable is by assuming the other independent variables are constant (Ghozali & Ratmono, 2018). This test is used to determine whether each independent variable individually has a significant effect on the dependent variable. The t-statistical test was carried out with state the null hypothesis and alternative hypothesis, determine the significance level, find the t-statistical value together with p-value through regression analysis, make decision about hypothesis acceptance/rejection, and interpret the test's decision result.

The advantages of research using panel data are that panel data provides more informative data, more varied, lower collinearity, greater degree of freedom, and more efficient. Panel data is also able to detect and measure unobservable effects through pure time series data or pure cross section data (Gujarati, 2003). Panel data allows a more complex study of behavior in the model so that panel data testing does not require classical assumption tests. With the various advantages of panel data, classical assumption testing is not required (Gujarati, 2003).

In-depth interview is the process of obtaining information for research purposes by means of question and answer while face to face between the interviewer and the respondent or the person being interviewed, with or without using an interview guide in which the interviewer and informant are involved in a relatively long social life (Ryan, et al., 2013). In-depth interview method, in this study, was used as a complementary procedure. It aims to

obtain additional information that can complement the results of the quantitative methods that have been carried out. In-depth interviews will be conducted with investors with the aim of exploring the factors that empirically affect the value of the company and to find out more about the things that investors consider in their investment decisions. An in-depth interview was conducted face-to-face via Google Meet with an investor. The investor is a private employee in a multinational company in Indonesia. His experience in the world of stock market investment ranges from 4-5 years.

FINDINGS AND DISCUSSION
Relationship between SR Disclosure and Firm Value

The relationship between SR disclosure and firm value is identified through the correlation coefficient and the coefficient of determination. In the sample with size of 89 selected companies, Figure 6 shows a correlation coefficient value of 0.977 (the rooting result from R-squared 0.955). However, this value does not indicate whether there is a linear correlation between the independent variable and the dependent variable.

Effects Specification			
Cross-section fixed (dummy variables)			
R-squared	0.955391	Mean dependent var	2.329261
Adjusted R-squared	0.932960	S.D. dependent var	2.577605
S.E. of regression	0.667394	Akaike info criterion	2.292186
Sum squared resid	78.83841	Schwarz criterion	3.501371
Log likelihood	-216.0068	Hannan-Quinn criter.	2.777908
F-statistic	42.59325	Durbin-Watson stat	2.035827
Prob(F-statistic)	0.000000		

Source: Analysis through EViews 10
Picture 6. Correlation Coefficient and Coefficient of Determination for 89 Samples.

To investigate the significance of the correlation between two variables, a correlation test is employed with following steps.
a. State the null-hypothesis and the alternative hypothesis.
   H_0 : $\rho = 0$ (no correlation between two variables)
   H_1 : $\rho \neq 0$ (significance correlation between two variables)
b. Specify the selected significance level.
   It is specified that $\alpha = 0.1$.
c. Determine test statistic for making decision.

$$t = \frac{R}{\sqrt{\frac{1 - R^2}{df}}}$$

   Whereas:
   t   = the test statistic t
   R   = Correlation coefficient
   R^2 = Coefficient of Determination or square of correlation coefficient
   df   = Degrees of freedom = Tn − L − n where Tn is the total sample, L is the number of independent variables, and n is the total of individual.
d. Calculate the test statistic.
   Based on figure 6, we can count R by square root of "R-squared" which is $\sqrt[2]{0.955391} = 0.977$.
   The test statistic t can be counted using R = 0.977 and degrees of freedom 177. Therefore, test statistic t = 61.273.

e. Conclude the decision for rejecting or non-rejecting the null hypothesis.
    t-table for significance level 0.1 (two tailed) and degrees of freedom 49 are showing 1.676.
    Due to test statistic t = 61.273 is much bigger than the t-table (two tail) 1.653, we can
    conclude that we will reject null-hypothesis.
f. Interpret the decision.
    Based on correlation test, we can conclude that there's sufficient evidence to support
    linear correlation between variables.

In the sample with size 25 selected companies, figure 7 shows the correlation
coefficient value of 0.942 (as the result from square root of R-squared 0.888366). Then to
examine the significance of linear correlation, a correlation test will be carried out with the
same stages as the correlation test for 89 companies. The correlation test on 25 companies is
as follows.

Effects Specification			
Cross-section fixed (dummy variables)			
R-squared	0.888366	Mean dependent var	1.341871
Adjusted R-squared	0.831409	S.D. dependent var	0.562169
S.E. of regression	0.230825	Akaike info criterion	0.173353
Sum squared resid	2.610733	Schwarz criterion	0.976749
Log likelihood	19.49925	Hannan-Quinn criter.	0.494141
F-statistic	15.59733	Durbin-Watson stat	2.267818
Prob(F-statistic)	0.000000		

Source: Analysis through EViews 10
Picture 7. Correlation Coefficient and Coefficient of Determination for 25 Samples.

a. State the null-hypothesis and the alternative hypothesis.
    H_0 : $\rho = 0$ (no correlation between two variables)
    H_1 : $\rho \neq 0$ (significance correlation between two variables)
b. Specify the selected significance level.
    It is specified that $\alpha = 0.1$
c. Determine test statistic for making decision.
$$t = \frac{R}{\sqrt{\frac{1 - R^2}{df}}}$$
d. Calculate the test statistic.
    Based on figure 6, we can count R by square root of "R-squared" which is $\sqrt[2]{0.955391} =$
    0.942.
    The test statistic t can be counted using R = 0.942 and degrees of freedom 49. Therefore,
    test statistic t = 19.703.
e. Conclude the decision for rejecting or non-rejecting the null hypothesis.
    t-table for significance level 0.1 (two tailed) and degrees of freedom 49 are showing 1.676.
    Due to test statistic t = 19.703 is much bigger than the t-table 1.676, we can conclude that
    we will reject null-hypothesis.
f. Interpret the decision.
    Based on correlation test, we can conclude that there's sufficient evidence to support
    linear correlation between variables.

Based on the correlation analysis above for the 89 and 25 selected companies, both
correlation coefficients are significance. For the sample with size of 89 companies, an R-
square of 0.955 is obtained, which means that the independent variable SRDI is able to
explain the variation of the dependent variable Q by 95.5%. While the sample with size of
25 selected companies obtained an R-square of 0.888 which means that the independent

variable SRDI is able to explain the variation of the dependent variable Q of 88.8%. Therefore, the R-square of the sample size 89 companies is stronger than the R-square of the sample size of 25 companies.

The Effect of SR Disclosure to Firm Value

The effect of SR disclosure to firm value is examine using regression analysis for panel data with fixed effect model. To obtain the estimated regression equation, EViews 10 is employed. Figure 8 shows the regression analysis output for 89 samples.

```
Dependent Variable: Q
Method: Panel Least Squares
Date: 06/22/20   Time: 10:41
Sample: 2016 2018
Periods included: 3
Cross-sections included: 89
Total panel (balanced) observations: 267
```

Variable	Coefficient	Std. Error	t-Statistic	Prob.
SRDI	0.149753	0.520252	0.287848	0.7738
C	2.303223	0.099253	23.20566	0.0000

Source: Analysis through EViews 10
Picture 8. Regression Analysis Output for Panel Data 89 Samples.

Based on analysis output above, we can conclude that the estimated regression equation for sample size 89 selected companies is as follows:

$$\hat{Q} = 2{,}303223 + 0{,}149753\, SRDI$$

To get further interpret, the regression results in 89 companies must be proven to be significant. The point is that the regression equation can only be explained if the disclosure of SR does have a significant effect on firm value. If the effect is not significant, then the interpretation of the regression equation is not needed because there is no influence between variables. Therefore, to prove the effect, a t-statistical test was conducted on 89 selected companies with the following stages.

a. State the null-hypothesis and the alternative hypothesis.
   H_0 : $\beta_1 = 0$ (SRDI has no significance effect to Tobin's Q)
   H_1 : $\beta_1 \neq 0$ (SRDI significantly affect the Tobin's Q)
b. Specify the selected significance level.
   It is specified that $\alpha = 0.1$.
c. Determine and calculate test statistic for making decision.
   For analyzing the effect significance, we use t-statistic and p-value as the base on making decision for hypothesis rejection or non-rejection. Based on figure 8, t-statistic = 0.287 and p-value = 0.77.
d. Conclude the decision for rejecting or non-rejecting the null hypothesis.
   Due to p-value = 0.77 is larger than $\alpha = 0.1$, the null-hypothesis is not rejected.
e. Interpret the decision.
   Based on t-test, we can conclude that there's no sufficient evidence to support significant effect of SRDI to Tobin's Q. With the insignificant results of the regression analysis in the 89 selected companies, the interpretation of the regression equation cannot be carried out further.

Next, regression analysis for panel data ran above the sample with size of 25 companies. The analysis output is shown in figure 9.

```
Dependent Variable: Q
Method: Panel Least Squares
Date: 06/22/20   Time: 11:06
Sample: 2016 2018
Periods included: 3
Cross-sections included: 25
Total panel (balanced) observations: 75
```

Variable	Coefficient	Std. Error	t-Statistic	Prob.
SRDI	0.820510	0.475752	1.724660	0.0909
C	1.121063	0.130775	8.572458	0.0000

Source: Analysis through EViews 10
Picture 9. Regression Analysis Output for Panel Data 25 Samples.

Based on the output above, we can conclude that the estimated regression equation for sample size 25 selected companies is as follows:

$$\hat{Q} = 1{,}121063 + 0{,}820510 \, SRDI$$

Similar to the 89 selected companies, the regression results for the 25 selected companies also need a t-statistic test to determine whether there is a significant effect of SR disclosure on firm value. It also aims to determine whether the regression equation that has been formulated can be interpreted or not. The t-statistical test on the 25 selected companies is as follows.

a. State the null-hypothesis and the alternative hypothesis.
    H_0 : $\beta_1 = 0$ (SRDI has no significance effect to Tobin's Q)
    H_1 : $\beta_1 \neq 0$ (SRDI significantly affect the Tobin's Q)
b. Specify the selected significance level.
    It is specified that $\alpha = 0.1$.
c. Determine and calculate test statistic for making decision.
    For analyzing the effect significance, we use t-statistic and p-value as the base on making decision for hypothesis rejection or non-rejection. Based on figure 9, t-statistic = 1.724 and p-value = 0.0909.
d. Conclude the decision for rejecting or accepting the null hypothesis.
    Due to p-value = 0.0909 is smaller than $\alpha = 0.1$, the null-hypothesis is rejected.
e. Interpret the decision.
    Based on t-test, we can conclude that there's sufficient evidence to support significant effect of SRDI to Tobin's Q. With the significance of the results of the regression analysis on the 25 selected companies, the regression equation can be interpreted further. The regression equation can be interpreted as follows:
    - In the regression equation, the constant coefficient is positive, meaning that in general, when a company does not disclose a sustainability report, the value of the company remains positive. However, with the fixed effect approach, each company has its own intercept. If the intercept is included in the model, each company has a regression equation with different constants.
    - The regression coefficient of SR disclosure (SRDI) is positive, meaning that the increase in SRDI will be accompanied by an increase in company value (Tobin's Q). Meanwhile, the decrease in HRDI will be accompanied by a decrease in the value of the company. This shows that SRDI has a significant positive effect on firm value.

- Based on the results of research on both samples, it is known that hypothesis testing on 89 companies shows that there is no significant effect of SR disclosure on firm value. The results of this test are consistent with the research conducted by Rizki et al. (2019) but not consistent with research conducted by Schadewitz and Niskala (2010), Swarnapali and Le (2018), Bachoo et al. (2013), Loh et al. (2017), Lee et al. (2019), Johansson and Zametica (2019), Latifah and Luhur (2017), and Nugroho and Arjowo (2014). The results of this study also do not support the importance of sustainability reports in the perspective of agency theory, stakeholder theory, legitimacy theory, and signal theory. On the other hand, hypothesis testing on 25 companies shows a significant positive effect of SR disclosure on firm value. This means that the significance of the SR disclosure can only be found in a small and certain sample.

Other Factors that Affect Company Value to Investors and Their Decision to Invest

Based on the results of in-depth interviews, investors said that the existence of a sustainability report was a new thing for him. So far what is known is only about CSR, and even then with limited knowledge. He thinks that CSR activities are a good thing because companies are supposed to contribute to the environment in which they live. However, CSR has never influenced their investment decisions.

According to him, investors never pay attention to whether a company does CSR or not, the most important thing is the quality of its financial fundamentals. These fundamentals are related to company profits, company margins, capital growth, cash growth, and so on. Furthermore, he explained that in stock investment the goal of investors is to make a profit. Therefore, what is considered is how the condition of the shares, especially related to stock prices. To get the maximum profit, investors will buy shares when the price is low and sell it when the price is high. Determination of high and low stock prices is carried out by various analyzes so as to produce an assessment of whether the stock is in an undervalued or overvalued condition.

He explained that in the short term the stock price is determined by the dealer, while in the long term the stock price is determined by the quality of its financial fundamentals. Stock prices are also determined by other factors such as news, commodity prices, and the structure of the company's board of directors. As for the sustainability report, he said that it may not have an effect and not be related to the price and value of the company.

CONCLUSIONS

This research examined the effect of SR disclosure to firm value based on data of listed public companies in Indonesia Stock Exchange. With reference from some previous study in some countries, sustainability report disclosure index (SRDI) is used to measure SR disclosure and Tobin's Q is employed to represent firm value. The effect of SRDI to Tobin's Q is examined using regression analysis for panel data. Some conclusion are made based on the research.

First, the test results using correlation coefficients on 89 and 25 selected companies show that sustainability reports or SR have a very strong relationship with firm value. For the sample with size of 89 companies, an R-square of 0.955 is obtained, which means that the independent variable SRDI is able to explain the variation of the dependent variable Q by 95.5%. While the sample with size of 25 selected companies obtained an R-square of 0.888 which means that the independent variable SRDI is able to explain the variation of the dependent variable Q of 88.8%. Therefore, the R-square of the sample size 89 companies is stronger than the R-square of the sample size of 25 companies.

Second, the results of hypothesis testing on 89 selected companies show that SR has no significant effect on firm value. While the results of hypothesis testing on 25 selected

companies indicate that SR has a significant positive effect on firm value. This means that the significance of SR in Indonesia can only be found in a small and certain sample.

Third, many factors affect the value of the company including profitability, company growth, capital structure, and company size. Investors' decisions to invest are influenced by media coverage, economic conditions, and changes in stock prices. For large investors will usually consider the structure of the board of directors

REFERENCES

Alvarez, I. G. (2018). Assessing Corporate Environmental Issues in International Companies: A Study of Explanatory Factors. *Wiley Business Strategy and Environment Journal, Vol 27*, 1284-1294.

Arowoshegbe, A. O., & Emmanuel, U. (2016). Sustainability and Triple Bottom Line: An Overview of Two Interrelated Concepts. *Igbinedion University Journal of Accounting, 2*, 88-126.

Astara, O., Mitoula, R., & Heodoropoulou, E. (2015). Corporate Social Responsibility: A Marketing Tool and/or a Factor for the Promotion of Sustainable Development for Companies? A Review of Companies in the Athens Stock Exchange. *International Journal on Strategic Innovative Marketing, Vol. 02*, 17-33.

Bachoo, K., Tan, R., & Wilson, M. (2013). Firm Value and the Quality of Sustainability Reporting in Australia. *Australian Accounting Review No. 64, Vol 23*, 67-87.

Ching, H. Y. (2014). Scoring Sustainability Reports using GRI indicators: A Study based on ISE and FTSE4Good Price Indexes. *Journal of Management Research Vol. 6, No. 3*, 27-48.

Dang, H. N., Vu, V. T., Ngo, X. T., & Hoang, H. T. (2019). Study the Impact of Growth, Firm Size, Capital Structure, and Profitability on Enterprise Value: Evidence of Enterprises in Vietnam. *The Journal of Corporate Accounting & Finance*, 144-160.

Ernst&Young, & Boston College. (2016). *Value of Sustainability Reporting: A Study by EY and Boston College Center for Corporate Citizenship.* Londo: Ernst&Young.

Fiakas, D. (2005). Tobin'sq: Valuing Small Capitalization Companies. *Crystal Equity Research*.

Freeman, R. E. (2010). *Strategic management: A stakeholder approach.* New York: Cambridge University Press.

Ghozali, I., & Ratmono, D. (2018). *Analisis Multivariat dan Ekonometrika: Teori, Konsep, dan Aplikasi dengan Eviews 10.* Semarang: Badan Penerbit .

Global Reporting Initiative. (2013). *G4 Sustainability Reporting Guidelines.* Amsterdam: Global Reporting Initiative.

Global Reporting Initiative. (2019). *Consolidated Set of GRI Sustainability Reporting Standards 2019.* Amsterdam: Global Reporting Initiative.

Gujarati, D. (2003). *Basic Econometrics.* New York: McGraw Hill.

Hayes, A. (2021). *Q Ratio: Tobin's Q.* New York City: Investopedia. Retrieved September 14, 2022, from https://www.investopedia.com/terms/q/qratio.asp

Hidayah, N., Badawi, A., & Nugroho, L. (2019). Factors Affecting The Disclosure of Sustainability Reporting. *International Journal of Commerce and Finance, Vol 5, No. 2*, 219-229.

Ikatan Akuntan Indonesia. (2015). *Pernyataan Standar Akuntansi Keuangan 01: Penyajian Laporan Keuangan (Revisi 2015).* Jakarta: Ikatan Akuntan Indonesia.

Indrarini, S., Chandrarin, G., & Subiyantoro, E. (2019). Managerial Ownership, Earnings Predictability and Firm Value on Indonesia Stock Exchange. *IOSR Journal of Business and Management (IOSR-JBM)*, 39-46.

Johansson, J., & Zametica, A. (2019). *GRI- Quality and Firm Performance: A Quantitative Study about the Impact of Sustainability Reports Quality on Firm Performance and Firm Value in the Swedish Manufacturing Industry.* Karlstad: Karlstad Business School.

KPMG. (2017). *The Road Ahead: The KPMG Survey of Corporate Responsibility Reporting 2017.* Amstelveen: KPMG.

Latifah, S. W., & Luhur, M. B. (2017). Pengaruh Pengungkapan Sustainability Report terhadap Nilai Perusahaan dengan Profitabilitas sebagai Pemoderasi. *Jurnal Akuntansi dan Bisnis, Vol 17, No. 1*, 13-18.

Lee, D., Lee, S., & Cho, N.-E. (2019). Voluntary Disclosure and Market Valuation of Sustainability Reports in Korea: The Case of Chaebols. *MDPI Open Access Journal, Vol 11, No. 3577*, 1-20.

Loh, L., Thomas, T., & Wang, Y. (2017). Sustainability Reporting and Firm Value: Evidence from Singapore-Listed Companies. *MDPI Open Access Journal, Vol 9, No. 2112*, 1-12.

Lonkani, R. (2018). *Firm Value: Theory and Empirical Evidence.* London: IntechOpen.

Mahastanti, L. A. (2011). Faktor-Faktor yang Dipertimbangkan Investor dalam Melakukan Investasi. *Jurnal Manajemen Teori dan Terapan, Vol 4, No. 3*, 37-51.

Nugroho, L., Badawi, A., & Hidayah, N. (2019). Discourses of Sustainable Finance Implementation in Islamic Bank (Cases Studies in Bank Mandiri Syariah 2018). *International Journal of Financial Research Vol 10 No. 6*, 108-117.

Nugroho, P. I., & Arjowo, I. S. (2014). The Effects of Sustainability Report Disclosure Towards Financial Performance. *International Journal of Business and Management Studies, Vol 3, No. 3*, 225-239.

PricewaterhouseCoopers. (2019). *Purpose and Impact in Sustainability Reporting: A Review of Leading UK Companies.* London: PricewaterhouseCoopers.

Radin, A. J. (2019). Assurance Attestation Statements on Sustainability Reports. *The CPA Journal; New York Vol. 89, Iss. 7*, 6-8.

Rizki, M. K., Agriyanto, R., & Farida, D. N. (2019). The Effect of Sustainability Report and Profitability on Company Value: Evidence from Indonesian Sharia Shares. *Economica: Jurnal Ekonomi Islam Vol. 10, No. 1*, 117-140.

Ryan, F., Coughlan, M., & Cronin, P. (2013). Interviewing in qualitative research: The one-to-one interview. *International Journal of Therapy and RehabilitationVol. 16, No. 6*, 309-314.

Schadewitz, H., & Niskala, M. (2010). Communication via responsibility reporting and its effect on firm value in Finland. *Wiley Corporate Social Responsibility and Environmental Management Vol. 17, Issue 2*, 96-106.

Sudiyanto, B., & Puspitasari, E. (2010). Tobin's Q dan Altman Z-Score sebagai Indikator Pengukuran Kinerja Perusahaan. *Kajian Akuntansi, Vol 2, No. 1*, 9-21.

Swarnapali, R., & Le, L. (2018). Corporate Sustainability Reporting and Firm Value: Evidence from a Developing Country. *International Journal of Organizatonal Innovation, Vol. 10 Issue 4*, 69-78.

Tarigan, J., & Semuel, H. (2014). Pengungkapan Sustainability Report dan Kinerja Keuangan. *Jurnal Akuntansi dan Keuangan, Vol 16, No. 2*, 88-101.

The Association of Chartered Certified Accountants. (2013). *The Business Benefits of Sustainability Reporting in Singapore.* Singapore: The Association of Chartered Certified Accountants.

Triola, M. F. (2011). *Essentials of Statistics.* London: Pearson.

United Nation Global Compact. (2013). *Global Corporate Sustainability Report 2013.* New York: United Nation Global Compact.

Widarjono, A. (2006). *Ekonometrika untuk Analisis Ekonomi dan Keuangan.* Jakarta: Lembaga Penerbit Fakultas Ekonomi Universitas Indonesia.