1 *Article*

2 Sustainability Reporting and Value Relevance of
3 Financial Statements

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11 **Abstract:** This study examines whether information about the winners of the Sustainability Reporting
12   Award (SRA) contributes to the usefulness of the information in the financial statements. This study
13   used a sample consisting of 110 winners of SRA (SRA firms) and 110 companies that did not receive
14   SRA (non-SRA firms) from 2008 to 2016. The study found that earnings per share (EPS), book value
15   per share (BVPS), and earnings per share change (EPSC) are value relevant information. Results of
16   comparison between SRA firms and non-SRA fimrs, this study found that EPS positive association
17   with stock price and with returns for SRA firms is higher than that for non-SRA firms. Findings of this
18   study also show that, value relevance of BVPS for non-SRA firms is higher than that for SRA firms.
19   When mesures of Price and BVPS are transformed into natural logarithm, the value relevance of BVPS
20   for SRA firms is higher than that for non-SRA firms. Thus, the results are sensitive to measures of the
21   variables. The findings of this study indicate that information about the winners of SRA contributes
22   to the usefulness of financial statements.

23 **Keywords:** sustainability reporting award (SRA), financial statements, value relevance, earnings per
24   share (EPS), earnings per share change (CEPS), book value per share (BVPS).

25 1. Introduction

26   The importance of the financial markets, institutions and instruments has grown markedly during
27 the last five decades. Nowadays, also with fewer and fewer barriers to international trade and financial
28 flows, and with communications technology directly linking each major financial centre, the
29 dimensions of international finance and financial markets is becoming more and more unique. [1]
30   In making investment decisions in the capital market, investors need to determine the intrinsic
31 value of securities, such as stocks, which are used as the basis for investment decision making. The
32 market price of the stock, which is the price agreed upon by the seller and the buyer, reflects the
33 valuation of the stock performed by the investors trading the stock. [2] The stock prices may rise or fall
34 due to factors that affect the prices. Performance of a company and its prospects are important factors
35 that affect the stock prices. Information on the performance and the prospects of the company is
36 reflected in the financial statements presented for investment decision-making purposes. Therefore,
37 many studies have been conducted to examine the usefulness of accounting information including
38 financial statements by examining the value relevance of accounting information, which among other
39 things is done by examining the relationship between accounting information and stock prices or stock
40 returns. Many previous studies also examined and found factors affecting the relationship between
41 accounting information and stock prices or stock returns. For example, the factors include increased
42 working capital efficiency [3], financial crises [4], the sustainable cross-border cooperation [5],
43 stakeholders pressure [6] errors occurrence in accounting [7] and presentation of financial statements
44 based on International Financial Reporting Standards (IFRS) [8]. The current study examines whether
45 sustainability reporting award (SRA) is a factor that affects the value relevance of accounting

46 information. In this study, accounting information is the information contained in the financial
47 statements. Therefore, more specifically this study examines the impact of SRA on the value relevance
48 of financial statements.

49   Sustainability reporting is an issue that has been the focus of the business world in recent years
50 [9]. In Indonesia, companies are interested in following the sustainability reporting award (SRA)
51 organized by the National Center for Sustainability Reporting (NCSR). Sustainability reporting is the
52 reporting by companies or organizations on the economic, environmental and social impacts caused by
53 their daily activities. Studies on sustainability reporting have been undertaken, and the results of these
54 studies describe companies that implement sustainability reporting, such as having the objective of
55 seeking organizational legitimacy [10], beginning to take into account the oversight of the board and
56 the arrangement of sustainability responsibilities, as well as attention to compliance, ethics and external
57 verification [11], has reported stakeholder issues and achievements in engaging stakeholders [12]. In
58 relation to stock prices, Ansari [13] found that sustainability reporting had a positive effect on stock
59 prices of real estate companies. Findings of other previous studies such as Loh et al. (14) and Lourenço
60 et al. (15) also show the usefulness of sustainability reporting. However, previous research findings
61 also show that there are weaknesses in sustainability reporting, such that sustainability reporting is
62 more helpful for internal communication than in external communications [10, 16], sustainability
63 reporting provides information on the financial value more qualitatively than quantitatively [17], Other
64 views by Gray [18] and Gray and Milne [19] even disagree or less agree with the usefulness of existing
65 sustainability reporting.

66   The current study aims to explore whether sustainability reporting award (SRA) has a positive
67 impact on the value relevance of financial statements. More specifically, whether companies receiving
68 SRA have a higher value relevance of financial statements than firms that do not receive SRA. The
69 results of this study are expected to contribute to the accounting research literature particularly in
70 explaining by providing empirical evidence as to whether the SRA has a role in making investment
71 decisions based on accounting information.

72   The organization of the paper for the following sections is as follows. Section 2 provides an
73 overview of the literature review of sustainability reporting award and the value relevance of
74 accounting information. Section 3 presents research methods that include statistical models, research
75 variables, and sample selection. Section 4 reports the results of the study and its discussion. Section 5
76 presents conclusions, implications, limitations, and suggestions for further research.

77 **2. Literature Review**

78 *2.1. Value Relevance of Financial Statements*

79   Based on the conceptual framework, the purpose of financial reporting is to provide useful
80 information for users, especially investors and creditors in making investment decisions. The scope of
81 financial reporting includes the financial statements and disclosures outside of the financial statements
82 that are the products of accounting. The study on the usefulness of financial information for investment
83 decisions often uses the term 'study on the value relevance of accounting information', since accounting
84 information is relevant in determining the intrinsic value of securities/stocks and subsequently used
85 for investment decisions as reflected in the stock market price. Therefore, the study on the value
86 relevance of accounting information is often carried out by examining the relationship between
87 information in financial statements and/or disclosures outside of the financial statements, called
88 accounting information, and stock prices or stock returns. An early study that examined the usefulness
89 of accounting information was undertaken by Ball and Brown [20] which was then followed by many
90 subsequent studies. The study on the value relevance of accounting information is a field of financial
91 accounting research whose results are widely published and gives direction to new research in the field
92 [21].

93   A previous study by Mohan and John [22] on the value relevance of financial information,
94 examined the association between earnings per share (EPS) and/or other information such as earnings

95   per share change (CEPS) and book value per share (BVPS). Other studies examined the impact of
96   various contextual factors on the value relevance of accounting information in various countries such
97   as accounting practices in six Asian countries [23], investor protection in many countries [24], macro
98   factors and bank-level factors in many countries [25], premium/discount firm in the United States [26],
99   intellectual capital or intangible assets in Taiwan [27], improvements in working capital efficiency in
100 Malaysia [3], financial crisis in Turkey [4], and adoption of interntional financial reporting standards
101 (IFRS) in Norway [28], in Europe [29], in China [30], in Indonesia [8].
102   Several previous studies on sustainability reporting linkages with firm performance have been
103 conducted. For example, Ching et al. (31) investigate whether there is a relationship between the quality
104 of sustainability reporting and financial performance. Their findings show that there is no association
105 between the quality of sustainability reporting and financial performance. Increasing the quality of
106 sustainability disclosure over time does not indicate an improvement in financial performance. On the
107 other hand, Loh et al. (14) examined and found that firms with sustainability reporting had higher firm
108 values than firms that did not present sustainability reporting. In addition, the quality of sustainability
109 reporting also has an impact on firm value. Lourenço et al. (15) examines the relationship between
110 sustainability reporting and the value relevance of book value and net operating income. More
111 specifically, the examine whether companies included in the Dow Jones Sustainability United States
112 Index (DJSI US) have a higher value relevance of book value and net operating income. Companies that
113 are included in DJSI are used as indicators of reputation for sustainability leadership. They found that
114 companies which has reputation for sustainability leadership has a higher value relevance of net
115 operating income. To contribute to the accounting research literature particularly on the value
116 relevance of accounting information, the present study examines the impact of the sustainability
117 reporting award (SRA) on the value relevance of information contained in financial statements
118 particularly book value per share, earning per share, and earnings per share change using data from an
119 emerging market, Indonesia, that recently organised SRA participated voluntarily by companies.

120 *2.2. Sustainability Reporting*

121   Sustainability reporting is based on the Standard of the Global Reporting Initiative (GRI). The
122 sustainability reporting reflects global best practices for reporting public economic, environmental and
123 social impacts. The GRI standard provides information about the positive or negative contribution to
124 the sustainable development provided by the organization. The GRI is a non-governmental
125 organization based in the Netherlands. As an initiative of the United Nations Environment Program, it
126 began in 1997 and became independent in 2002. In 2005, Indonesia established a non-profit organization
127 namely National Center for Sustainability Reporting (NCSR) by five organizations, namely the Institute
128 of Management Accountants Indonesia (IAMI), the Forum for Corporate Governance in Indonesia
129 (FCGI), the National Committee on Governance (NCG), the Indonesian Association of Issuers (AEI)
130 and the Indonesian-Netherlands Association (INA). NCSR has been appointed as a GRI member since
131 2006 and is a GRI training partner in Southeast Asia, including Indonesia, Malaysia, Singapore and the
132 Philippines. NCSR organizes Sustainability Reporting Award (SRA) every year in order to encourage
133 sustainability reporting by companies in Indonesia.
134   The GRI standard, as noted above, provides information about the organization's positive or
135 negative contribution to sustainable development, which according to WCED (1987) is "development
136 that meets the needs of the present without compromising the ability of future generations to meet their
137 own needs" [32]. According to Gray and Milne [19], sustainability reporting in the public domain, in
138 essence, is absent anywhere in the world, because sustainability reporting is extremely difficult or
139 impossible. However, after the GRI Guideline was published, many studies on sustainability reporting
140 were conducted. Hedberg and Malmborg [10] reviewed the use and experience of GRI in ten companies
141 in Sweden. From interviews with all Swedish companies using GRI guidelines, they found that
142 companies that implement corporate sustainability reporting (CSR) using GRI guidelines are based on
143 a variety of reasons: to seek organizational legitimacy, to meet expectations of increasing CSR
144 credibility, availability of templates for the preparation of CSR reports, has been more helpful in

internal communication than in external communications, and to help companies learn about themselves and see what the company has done. According to Hedberg & Malmborg, GRI guidelines require further development. In contrast to the findings of Hedberg and Malmborg [10], Gray [18] argues that "substantive social and environmental reporting and, especially, high-quality reporting on (un)sustainability will demonstrate that modern international financial capitalism and the principle organs which support it are essentially designed to maximise environmental destruction and the erosion of any realistic notion of social justice".

Despite the different or even contradictory views of sustainability reporting as described above, the study of sustainability reporting continues. Kolk [11] studied 250 Fortune Global companies and found that many companies have begun to pay attention to board supervision and sustainability accountability structure, although the detailed disclosure has not been widely practiced. Astupan and Schönbohm [33] in a descriptive study on the sustainability reporting performance of the WIG 20 and mWIG 40 companies in Poland provide empirical evidence that the sustainability reporting performance is relatively low. Mulkhan [12] in a content analysis study on Corporate Social Responsibility (CSR) Reporting in the Indonesia Sustainability Reporting Award (ISRA) 2010 found that 60 percent of 10 leading companies use guidelines of the Global Reporting Initiative (GRI). Furthermore, Mulkhan also found that the companies have reported stakeholder issues and their achievements in engaging stakeholders. Findings from the descriptive study conducted by Lins et al. [17] in the top ten mining companies indicates that quantitative information is less communicated than qualitative information, and the financial value of environmental, social, and governance (ESG) measures is not fully communicated by the top ten leaders of the mining sector in their report. A study conducted by Farneti and Guthrie [16] on seven public sector organizations in Australia also found that from the perspective of information providers, the disclosure of sustainability information is more widely used for internal stakeholders, and results of the study is in line with the findings of the Hedberg and Malmborg [10] study. In addition, sustainability reporting is generally conducted using the annual report media. Truant et al. [34] report that sustainability risk disclosure of a sample of large Italian organizations is positively influenced by the international presence and sustainability experience, but it is not affected by the presence of external assurance. Dobre et al. [35] found that environmental and social protection reported by Romanian listed companies could have an effect on the long-run financial performance.

2.3. Sustainability Reporting and Value Relevance of Accounting Information

Previous studies of sustainability reporting have also examined its relationship with accounting information. Ansari et al. using an event study methodology with a global sample (Europe, the United States, and Australia) found that sustainability reporting has a positive effect on stock prices of real estate firms. Based on these findings Ansari et al. [13] suggest that because sustainability and its communications do have an impact on the valuation of the company, relevant in decision making for shareholders, efforts to promote the sustainability of the company need to be done.

Findings from the studies on sustainability reporting as described above indicate that there is a positive support trend towards the existence of sustainability reporting [36, 37]. Nevertheless, it has also been described above that there are sustainability reporting weaknesses as proposed by Gray and Milne [17] and Gray [18].

The current study explores and examines whether sustainability reporting award (SRA) can improve the value relevance of the financial statements as part of accounting information. This study uses two theoretical foundations, namely decicion usefulness theory or called decision usefulness approach to financial reporting [38]. This approach is an approach in the engineering of financial reporting system that aims to generate financial information that is useful for investors in making investment decisions. The study of value relevance of accounting information is mostly done to test the decision usefulness of the accounting information. The decision usefulness approach to financial reporting is done by providing relevant information and full disclosure. However, not all information about the company revealed through the financial reporting system can be 'captured' by investors.

Therefore, managers need to convey signals to investors about 'good information' to assist them in using financial information for investment decision making. 'A signal is an action taken by a high-type manager that would not be rational if that manager was low type' [38]. This signaling theory is based on Spence's [39] work. Several previous studies related to sustainability reporting have used signaling theory, such as Dawkins and Ngunjiri [40], Mishra and Suar [41], Robinson et al. [42], Thorne et al. [43], and Reimsbach and Hahn [44] The current study explores and examines whether sustainability reporting award (SRA) can improve the value relevance of the financial statements as part of accounting information based on the decision usefulness approach to financial reporting and signalling theory. If the SRA is relevant, i.e. it is captured as a positive signal by the investor, then the investor will use information about SRA to support accounting information. Thus, the value relevance of the financial statements of firms receiving the SRA (SRA firms) is higher than that of firms that do not receive SRA (non-SRA firms). Conversely, if the SRA is irrelevant i.e. it is not captured as a positive signal by investors, then the investor will not use information about SRA to support accounting information. Thus, the value relevance of accounting information of firms receiving SRA (SRA firms) is not different than that of the firms that do not accept SRA (non-SRA firms). The present study aims to provide empirical evidence that answers the research questions.

3. Methods

3.1. Regression Models

To examine the impact of sustainability reporting award (SRA) on the value relevance of financial statements, this study uses the following regression models.

$$P = \alpha_0 + \alpha_1 EPS + \alpha_2 BVPS + \alpha_3 EPSxSRA + \alpha_4 BVPSxSRA + \varepsilon \tag{1}$$

$$P = \beta_0 + \beta_1 EPS + \beta_2 BVPS + \beta_3 EPSxSRA + \beta_4 BVPSxSRA + \beta_5 EPSxEPSPOS + \beta_6 BVPSxEPSPOS + \upsilon \tag{2}$$

$$R = \gamma_0 + \gamma_1 EPS + \gamma_2 EPSC + \gamma_3 EPSxSRA + \gamma_4 EPSCxSRA + \omega \tag{3}$$

$$R = \delta_0 + \delta_1 EPS + \delta_2 EPSC + \delta_3 EPSxSRA + \delta_4 EPSCxSRA + \delta_5 EPSxEPSPOS + \delta_6 BVPSxEPSPOS + \eth \tag{4}$$

$$P = \pi_0 + \pi_1 EPS + \pi_2 BVPS + \pi_3 EPSPOS + \varrho \tag{5}$$

$$R = \varrho_0 + \varrho_1 EPS + \varrho_2 EPSC + \varrho_3 EPSPOS + \varsigma \tag{6}$$

Equation (2) and equation (4) are expanded using year-dummy variables as follows. Equation (2a) is the equation (2) with year-dummy variables. Equation (4a) is the equation (4) with year-dummy variables.

To show the impact of SRA on value relevance of EPS, BVPS, and EPSC, the following equation (5a) and equation (6a) are used. Equation (5a) is the equation (5) which are applied for SRA firm subsample and for non-SRA firm subsample with year-dummy variables. Equation (6a) is the equation (6) with year-dummy variables which are applied for SRA firm subsample and for non-SRA firm subsample.

Additional tests of the impact of SRA on value relevance of EPS, BVPS, and EPSC use the following equation (5c), equation (5d), equation (6c) and equation (6d). Equation (5c) is the equation (5) without variable independent EPSPOS which are applied for positive EPS. Equation (5d) is similar to Equation (5c) with year-dummy variables. Equation (6c) is the equation (6) without variable independent EPSPOS which are applied for positive EPS. Equation (6d) is similar to Equation (6c) with year-dummy variables.

3.2. Variables

This study uses stock price (P) and stock return (R) as dependent variables. P is the annual closing price of the stock of the firm j in year t, whereas R is the change in the closing price of the annual stock

234   which is divided by the firm's average price in year t and in year t-1. The independent variables consist
235   of earnings per share (EPS), earnings per share change (EPSC), and book value per share (BVPS). EPS
236   is the annual earnings per share of company j in year t. BVPS is the book value of equity per share at
237   the end of the year (on financial reporting date) of company j in year t. EPSC is the change of annual
238   earnings per share which is divided by the firm's average EPS in year t and in year t-1.

239   Sustainability reporting award (SRA) in this study is a dummy variable which serves as a
240   moderating variable. A winner of SRA (SRA firm) is given a value of 1, whereas a non-SRA winner
241   (non-SRA firms) is given a value of 0. Thus, SRA is SRA firm j in year t or non-SRA firm j in year t.
242   Furthermore, the SRA variable is multiplied by independent variables to form the following interaction
243   variables EPSxSRA, BVPSxSRA, and EPSCxSRA. These interaction variables serve to compare the
244   impact of SRA on the value relevance of the financial statements of SRA firms with the impact of SRA
245   on that of non-SRA firms.

246   *3.3. Data and Sample*

247   Data of dependent variables and independent variables that include stock price (P), earnings per
248   share (EPS), and book value per share (BVPS) for 2008-2015 were obtained from Fact Book 2009-Fact
249   Book 2016 (Table of Financial Data and Ratios). Data of stock price, earnings per share, and book value
250   per share for 2016 are derived from Performance Summary of Listed Companies or from the financial
251   statements available on the Indonesia Stock Exchange (IDX) website due to Fact Book 2017 which
252   contains 2016 data is not yet available at the time of this research data collection. The sustainability
253   reporting award (SRA) data for 2008-2016 were accessed from the website of the National Center for
254   Sustainability Reporting (NCSR) organizing the SRA. The lists of SRA winners also serves as a sample
255   frame.

256   The initial sample derived from the lists of winners of the SRA includes 261 SRAs for the years
257   2008-2016. The relatively small number of SRA firms is due to participation in the SRA which is
258   voluntary. This study requires stock price data in testing the value relevance of financial statements.
259   Therefore, the winners of SRA that are not listed on the Indonesia Stock Exchange (IDX) of 121
260   observations are deducted from the initial sample. A company may receive more than one SRA within
261   a year. Thus, the number of SRAs (140) is greater than the number of SRA firms (110) because some
262   SRA firms receive more than one SRA. In such cases, the SRA firms are included in the sample only
263   once. Accordingly, the SRA(s) outside the first SRA received by a company of 30 observations was
264   excluded from the sample and resulted in a sample of 110 firm-year observations--the final sample
265   becomes 110 (140-30). To test the impact of the SRA winner on the value relevance of the financial
266   statements, this study requires 110 firm-year observations that do not receive the SRA for the purpose
267   of matched pair comparison. Accordingly, the selection of the non-SRA firms is done with the following
268   criteria. A non-SRA firm: (1) has never obtained SRA, (2) belongs to the same industry sub-sector or
269   industry sector, for an example, if a SRA firm is in the industry sector of 'property, real estate and
270   building construction' and in the industry sub-sector of 'construction', then a company selected as non-
271   SRA firm is also a company in the same industry subsector; (3) the size of the selected non-SRA firm is
272   as close as possible to the corresponding firm's SRA size (as measured by the natural logarithm of total
273   assets), and (4) in the same year as the SRA firm. The selection criteria for the non-SRA firms are
274   intended to minimize the bias in the sample selection. This step resulted in a final sample of 220 firm-
275   year observations consisting of 110 SRA firms and 110 non-SRA firms. The sample selection procedure
276   is presented in Table 1.
277

278

Table 1. Sampling procedure

Sampling Procedure	Observations 2008-2016
Initial sample: Total SRAs	261
Firms not listed in the IDX	121
Firms listed in the IDX	140
The number of SRA(s) received by a company outside the first SRA received within the same year	30
Final sample:	
SRA firms	110
NonSRA firms (Control firms)	110
SRA firms and NonSRA firms	220

SRA = Sustainability Reporting Award; SRA firms = Firms as winners of SRA; IDX = Indonesia Stock Exchange

279 **4. Results and Discussion**

280 *4.1. Descriptive Statistics*

281 Descriptive statistics are presented in Table 2 consisting of descriptive statistics for the full sample
282 (Panel A), for the subsample of non-SRA winners or non-SRA firms (Panel B), and for the subsample
283 the SRA winners or SRA firms (Panel C). The subsample of SRA firms has a higher mean value of stock
284 price (P) and book value per share (BVPS) compared to non-SRA subsample but it has a lower mean of
285 EPS. These results may be related to positive relationship P with BVPS but not with EPS. The mean
286 value of R for SRA firms is lower than the mean of R for non-SRA firms but, conversely, the mean value
287 of EPSC for SRA firms is higher than the mean of EPSC for non-SRA firms. These results may indicate
288 that there is no positive association between R and EPSC. The full sample shows the mean values
289 between the two subsamples.
290

Table 2. Descriptive statistics

Variable	Minimum	Maximum	Mean	Std. Deviation
Panel A: Non-SRA Firms and SRA Firms (N = 220)				
P	50	74000	6346	8947
EPS	-516	62654	696	4249
BVPS	23	18734	2544	3304
R	-1.85	1.96	0.05	0.65
EPSC	-6.53	2.19	-0.04	0.65
Panel B: Non-SRA Firms (N = 110)				
P	50	22700	3926	4884
EPS	-516	62654	794	5968
BVPS	23	16351	2163	3344
R	-1.71	1.75	0.07	0.65
EPSC	-64.67	6.38	-0.98	7.20
Panel A: SRA Firms (N = 110)				
P	50	74000	8766	11188
EPS	-368	5273	598	799
BVPS	37	18734	2926	3233
R	-1.85	1.96	0.02	0.66
EPSC	-6.53	2.19	-0.08	0.92

4.2. Correlations

The results of correlation analysis are presented in Table 3 consisting of Panel A-the correlation for the full sample, Panel B-the correlation for the subsample of non-SRA firms, and Panel C-the correlation for the subsample of SRA firms. Table 3 shows that P has a positive correlation with BVPS and is significant at the 0.01 level. There is a moderate positive relationship between P and BVPS for Panels A and Panel B and a strong positive relationship between P and BVPS Panel C. P has strong positive relationship with EPS but only for Panel C. These results are consistent with the value relevance of BVPS, but the value relevance of the EPS is only for SRA firms. Table 3 shows that there is no correlation between R and EPSC for Panels A, Panel B, and Panel C. These results indicate that EPSC has no value relevance. The positive correlation of R with EPS indicates that EPS has value relevance but only for SRA firms.

303

Table 3. Correlations

Variable	P	EPS	BVPS	R	EPSC
Panel A: Non-SRA Firms and SRA Firms (N = 220)					
P	1				
EPS	.145*	1			
BVPS	.644**	0.088	1		
R	.259**	0.041	0.082	1	
EPSC	0.000	0.051	-.199**	0.011	1
Panel B: Non-SRA Firms (N = 110)					
P	1				
EPS	0.127	1			
BVPS	.555**	0.019	1		
R	.195*	0.025	-0.008	1	
EPSC	-0.112	0.05	-.310**	0.013	1
Panel C: SRA Firms (N = 110)					
P	1				
EPS	.875**	1			
BVPS	.755**	.846**	1		
R	.344**	.247**	0.183	1	
EPSC	0.166	.213*	0.107	0.057	1

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

304   *4.3. Regression Results*

305   Table 4 presents the regression results with the stock price (P) as the dependent variable. The
306   regression results consist of results for model (1), model (2), and model (2a) with a sample of 220
307   observations. The results of the three models show that the F values are significant at the 0.01 level. The
308   F-test is highly significant, thus it can can assumed that the model explains a significant amount of the
309   variance in P. The R Square and Adjusted R Square values are greater than 0.7. This means that the
310   linear regression explains more than 70.0% of the variance in the data. The regression results for model
311   (1), model (2), and model (2a) show that the EPSxSRA coefficient is positive and significant at the 0.01
312   level. These results indicate that the value relevance of the EPS for the SRA firms is higher than the that
313   for the non-SRA firms. The regression results model (1), model (2), and model (2a) show that the
314   BVPSxSRA coefficient is negative and significant at the 0.01 level model (1), model (2), and model (2a).
315   These results indicate that the value relevance of the BVPS for the SRA firms is lower than the that for
316   the non-SRA firms. However, the results change when natural logarithms are used to measure P and
317   BVPS, that is the value relevance of the BVPS for the SRA firms is higher than the that for the non-SRA
318   firms (Note: regression results are not presented). Coefficients of EPSxEPSPOS BVPSxEPSPOS as
319   controlling variables representing EPS and BVPS for positive EPS are not significant. Use of year-
320   dummy variables increase the R Square.

321

Table 4. Regression results - full sample (dependent variable: Price)

Variable	Model 1		Model 2		Model 2a	
	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.
(Constant)	1741.728000	0.000	1663.948000	0.000	-617.661100	0.590
EPS	0.100947	0.192	-4.694605	0.468	-6.169837	0.345
BVPS	0.856329	0.000	0.594069	0.048	0.553438	0.069
EPSxSRA	**11.530460**	**0.000**	**11.571520**	**0.000**	**11.257350**	**0.000**
BVPSxSRA	**-0.746169**	**0.007**	**-0.795819**	**0.005**	**-0.752536**	**0.010**
EPSxEPSPOS			4.794499	0.458	6.284446	0.337
BVPSxEPSPOS			0.314919	0.334	0.375542	0.254
Year-dummies	No		No		Yes	
N	220		220		220	
F	135.461	0.000	90.135	0.000	40.301	0.000
R Square	0.716		0.717		0.733	
Adjusted R Square	0.711		0.709		0.715	

EPS = Earnings per share; BVPS = Book value per share; SRA = 1 if a firm is an SRA winner, 0 if a firm is a non-SRA winner; EPSPOS = 1 if EPS is positive, 0 if EPS is negative. Year-dummies: No if year-dummy variables are not included in the model, Yes if year-dummy variables are included in the model; Results are not presented.

Regression results with stock return (R) as the dependent variable consisting of model (3), model (4), and model (4a) and with a sample of 220 observations are presented in Table 5. The results show that only model (4a), which include year-dummy variables, has significant F value (F= 4.776 significant at the 0.01 level) and the R Square and Adjusted R Square values are 0.246 and 0.194 respectively. The EPSxSRA coefficient for the model (4a) is positive and significant at the 0.05 level while the EPSCxSRA coefficient is also positive but not significant. These results indicate that using the return model, the value relevance of the EPS for the SRA firms is higher than that for the non-SRA firms.

Table 5. Regression results - full sample (dependent variable: Return)

Variable	Model 3		Model 4		Model 4a	
	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.
(Constant)	0.004239	0.932	-0.028132	0.583	-0.696957	0.000
EPS	0.000004	0.695	0.000146	0.863	0.000422	0.589
EPSC	-0.000227	0.979	-0.005251	0.558	-0.007127	0.390
EPSxSRA	**0.000135**	**0.056**	**0.000153**	**0.030**	**0.000135**	**0.038**
EPSCxSRA	**0.021540**	**0.756**	**-0.039165**	**0.588**	**0.009177**	**0.892**
EPSxEPSPOS			-0.000146	0.863	-0.000416	0.594
EPSCxEPSPOS			0.135039	0.006	0.129401	0.005
Year-dummies	No		No		Yes	
N	220		220		220	
F	1.116	0.350	2.068	0.058	4.776	0.000
R Square	0.020		0.055		0.246	
Adjusted R Square	0.002		0.028		0.194	

EPS = Earnings per share; EPSC = Earnging per share change; SRA = 1 if firm is an SRA winner, 0 if firm is a non-SRA winner; EPSPOS = 1 if EPS is positive, 0 if EPS is negative. Year-dummies: No if year-dummy variables are not included in the model, Yes if year-dummy variables are included in the model; Results are not presented.

331

332   Table 6 presents the regression results with the stock price (P) as the dependent variable for the
333 subsample of SRA firms and for non-SRA firm subsample. For for non-SRA firms, the coefficient of
334 BVPS are significant at the 0.01 level indicating the value relevance of BVPS is higher for non-SRA firms
335 than that for SRA firms. For for SRA firms, the coefficient of EPS are significant at the 0.01 level
336 indicating the value relevance of EPS is higher for SRA firms than that for non-SRA firms. However,
337 using natural logarithm for P and BVPS, the results change (Note: Regression results are not presented).
338 The BVPS coefficient is positively significant at the 0.01 level for both model (5) and model (5a) of the
339 SRA firms and non-SRA firms. These results indicate that BVPS have value relevance, both for SRA
340 firms and for non-SRA firms.
341

Table 6. Regression results - Non-SRA Firms and SRA Firms (dependent variable: Price)

Variable	Non-SRA Firms				SRA Firms			
	Model 5		Model 5a		Model 5		Model 5a	
	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.
(Constant)	1326.790	0.199	737.151	0.612	1594.948	0.521	184.259	0.945
EPS	**0.090**	**0.169**	**0.118**	**0.076**	**11.633**	**0.000**	**12.077**	**0.000**
BVPS	**0.795**	**0.000**	**0.835**	**0.000**	**0.184**	**0.547**	**0.046**	**0.894**
EPSPOS	1326.790	0.199	658.714	0.542			184.259	0.945
Year-dummies	No		Yes		No		Yes	
N	110		110		110		110	
F	17.575	0.000	6.218	6.218	115.621	0.000	32.059	0.000
R Square	0.332		0.411		0.766		0.783	
Adjusted R Square	0.313		0.345		0.759		0.758	

EPS = Earnings per share; BVPS = Book value per share; EPSPOS = 1 if EPS is positive, 0 if EPS is negative. Year-dummies: No if year-dummy variables are not included in the model, Yes if year-dummy variables are included in the model; Results are not presented.

342

343   Regression results with stock return (R) as the dependent variable for the subsample of SRA firms
344 and for non-SRA firm subsample are presented in Table 7. The EPS coefficient is positive and significant
345 at the 0.01 level for the SRA firms, but the EPS coefficient is not significant for non-SRA firms. The EPSC
346 coefficient is positive but not significant either for the SRA firms or for non-SRA firms. These results
347 are consistent with the regression results presented in Table 5 which indicate that the value relevance
348 of the EPS for the SRA firms is higher than that for the non-SRA firms, but the EPSC has no value
349 relevance either to the subsample of SRA firms as well as for non-SRA firms.

350

Table 7. Regression results - Non-SRA Firms and SRA Firms (dependent variable: Return)

Variable	Non-SRA Firms				SRA Firms			
	Model 6		Model 6a		Model 6		Model 6a	
	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.
(Constant)	-0.041895	0.805	-0.596898	0.024	-0.520286	0.113	1.421564	0.000
EPS	**0.000002**	**0.833**	**0.000008**	**0.431**	**0.000191**	**0.018**	**0.000190**	**0.007**
EPSC	**-0.001994**	**0.838**	**-0.001191**	**0.899**	**-0.041349**	**0.589**	**0.007610**	**0.914**
EPSPOS	0.131	0.479	0.179298	0.326	0.446026	0.184	0.561832	0.059
Year-dummies	No		Yes		No		Yes	
N	110		110		110		110	
F	0.194399	0.900	2.063	0.030	2.938	0.037	5.868	0.000
R Square	0.005472		0.188		0.077		0.397	
Adjusted R Square	-0.022675		0.097		0.051		0.329	

EPS = Earnings per share; EPSC = Earnings per share change; EPSPOS = 1 if EPS is positive, 0 if EPS is negative. Year-dummies: No if year-dummy variables are not included in the model, Yes if year-dummy variables are included in the model; Results are not presented.

351

352   Results of the additional tests of the impact of SRA on value relevance of EPS, BVPS, and EPSC
353 that use the equation (5b) and equation (6b) are presented in Table 8 and Table 9. Table 8 show that the
354 use of positive EPS subsample, BVPS is positively associated with P for non-SRA firms, while EPS is
355 positively with P for SRA firms. Table 9 show that using positive EPS subsample, EPS is positively
356 associated with R for SRA firms, while CEPS is positively with R for non-SRA firms. Thus, CEPS has
357 positive asassociation with R for firms with positive EPS.
358

Table 8. Regression results - Non-SRA Firms and SRA Firms (dependent variable: Price)
for positive EPS subsample

Variable	Non-SRA Firms				SRA Firms			
	Model 5c		Model 5d		Model 5c		Model 5d	
	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.
(Constant)	2313.870	0.000	1346.294	0.381	1261.637	0.093	-2521.375	0.188
EPS	**0.091**	**0.197**	**0.118**	**0.100**	**11.710**	**0.000**	**12.175**	**0.000**
BVPS	**0.817**	**0.000**	**0.877**	**0.000**	**0.166**	**0.595**	**0.024**	**0.947**
Year-dummies	No		Yes		No		Yes	
N (Positive EPS)	91		91		91		91	
F	18.109	0.000	4.924	0.000	161.911	0.000	32.938	0.000
R Square	0.292		0.381		0.760		0.778	
Adjusted R Square	0.275		0.304		0.756		0.754	

EPS = Earnings per share; BVPS = Book value per share; Year-dummies: No if year-dummy variables are not included in the model, Yes if year-dummy variables are included in the model; Results are not presented.

359

Table 9. Regression results - Non-SRA Firms and SRA Firms (dependent variable: Return)
for positive EPS subsample

Variable	Non-SRA Firms				SRA Firms			
	Model 6c		Model 6d		Model 6c		Model 6d	
	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.
(Constant)	0.027274	0.709	-0.484218	0.033	-0.072565	0.374	-0.871540	0.000
EPS	**-0.000001**	**0.909**	**0.000005**	**0.632**	**0.000188**	**0.022**	**0.000184**	**0.010**
EPSC	**0.140692**	**0.009**	**0.127888**	**0.019**	**-0.016881**	**0.871**	**0.040952**	**0.670**
Year-dummies	No		Yes		No		Yes	
N (Positive EPS)	91		91		91		91	
F	3.613969	0.031	2.526	0.011	2.757	0.068	5.908	0.000
R Square	0.075901		0.240		0.051		0.386	
Adjusted R Square	0.054899		0.145		0.033		0.321	

EPS = Earnings per share; EPSC = Earnings per share change; Year-dummies: No if year-dummy variables are not included in the model, Yes if year-dummy variables are included in the model; Results are not presented.

4.4. Discussion

This study examines the value relevance of the financial statements that include earnings per share (EPS), changes in earnings per share (EPSC), and book value per share (BVPS) and compares whether the value relevance of the financial statements for firms receiving sustainability reporting award (SRA firms) is higher than that for non-SRA firms. The study found that BVPS and EPS have value relevance, whereas EPSC does not. Further findings indicate that the value relevance of BVPS for SRA firms is higher than that for non-SRA firms, whereas the value relevance of EPS for SRA firms does not differ from that for non-SRA firms. The results of this study indicate that investors respond positively to BVPS as a relevant accounting information in stock valuation, and the market response to the BVPS for the SRA winners is higher than the market response to BVPS for non-SRA winners. From the perspective of signaling theory, the market captures information about the winners of SRA, provided by the National Center for Sustainability Reporting (NCSR) and which is pursued by participating companies of SRA, as a positive signal because the SRA participating companies and SRA winners are considered managed by high-type managers, that is, managers who have inside information about future prospects in favor of sustainability development. This information may be viewed in line with the interests of shareholders who expect a sustained return on their investment. This is indicated by the positive relationship between book value per share (BVPS) and stock price, which means that BVPS is the main factor in stock valuation. Nevertheless, the study finds that although EPS has value relevance, there is no difference in the value relevance of the EPS for the SRA firms from the non-SRA firms. In addition, the results of this study show that EPSC has no value relevance for the two subsamples. The EPSC that is unrelated to return can be caused by other factors that affect returns other than EPCS. The findings of this study indicate that EPS, instead of EPSC, has value relevance, i.e. EPS plays a role in stock return determination, and the value relevance of EPS for SRA firms is higher than that for non-SRA firms. Thus, BVPS and EPS are important information for investors in determining stock value, and the information about the winners of SRA has a positive impact on the value relevance of BVPS and EPS.

5. Conclusion

This study aims to examine whether the information on sustainability reporting award (SRA) winners has an impact on the value relevance of the financial statements, that include earnings per share (EPS), change in earnings per share (EPSC), and book value per share (BVPS). The results of this study indicate that EPS have value relevance, and the value relevance of EPS for the SRA firms is higher than that for firms that the non-SRA firms. The value relevance of BVPS for SRA firms is also higher than that for non-SRA firms when measures of price (P) and BVPS use natural log of those variables. This means that the higher the BVPS the higher the stock price and the relationship between BVPS and stock price is higher for SRA firms than for non-SRA firms. The study found that there is no value relevance of EPSC, which indicates that EPSC is not related to stock returns, either for SRA firms or for non-SRA firms when stock return (R) and EPSC are measured with price change and EPS change in percentage. When the change is measured in Rupiah, the results are consistent with that for EPS. Thus, information about the winners of SRA has an impact on the value relevance of the financial statements. The implication of the findings of this study is that the determination of the SRA winners to the SRA participants can improve the usefulness of information in financial statements, especially information about BVPS and EPS.

This study has limitations, among others, that the number of observations selected for the sample is relatively small. This is due to the limited participants and winners of SRA organized by the National Center for Sustainability Reporting (NCSR). Participating the SRA is voluntary and only part of the participants receive SRA. The winners of SRA, not participants of SRA, were selected as factors that

405 impacted the value relevance of financial statements because the winners of the SRA indicated a
406 relatively high quality in implementing the SRA. The number of observations in the sample becomes
407 even less due to the use of criteria that the winners of SRA are companies listed on the Indonesia Stock
408 Exchange (IDX). This criterion is required in this study because of the need for information about stock
409 prices for testing the value relevance of financial statements. The selection of samples with these specific
410 criteria limits the generalization of the results of this study. Further studies using a greater number of
411 observations, when data is available, and/or testing the usefulness of accounting information with other
412 methods, can be done to test the validity of the results of this study. Further study can also be conducted
413 to examine whether the signal captured from information about the winners of SRA is in line with the
414 future performance of the companies. In addition, future studies can also be undertaken to investigate
415 whether the SRA winners empirically indeed contribute more to sustainable development. These two
416 issues are interesting issues that are beyond the current study.

417 **Supplementary Materials:**

418 **Sources of data:**

419 Data of stock price (P), earnings per share (EPS), and book value per share (BVPS) for 2008-2015 were
420 obtained from Fact Book 2009- Fact Book 2016 (Table of Financial Data and Ratios);
421 Link: http://www.idx.co.id/en-us/home/publication/factbook.aspx

422 Data of stock price, earnings per share, and book value per share for 2016 are derived from (1)
423 Performance Summary of Listed Companies available on the Indonesia Stock Exchange (IDX) website
424 due to Fact Book 2017 which contains 2016 data is not yet available at the time of this research data
425 collection or (2) from the financial statements;
426 Link (1): http://www.idx.co.id/en-us/home/publication/performancesummaryoflistedcompanies.aspx
427 Link (2): http://www.idx.co.id/en-us/home/listedcompanies/financialannualreport.aspx

428 The sustainability reporting award (SRA) data for 2008-2016 were accessed from the website of the
429 National Center for Sustainability Reporting (NCSR) organizing the SRA.National Center for
430 Sustainability Reporting (NCSR);
431 Website of NCSR: http://sra.ncsr-id.org/; for example, data of SRA winner 2016 can be accessed as
432 follows: http://sra.ncsr-id.org/winner-sra-2016/

433 **Author Contributions:**

434 All authors have read and approved the final manuscript.

435 **Conflicts of Interest:**

436 The authors declare no conflict of interest.

437 **References**

438 [1] Vychytilová, J., Linkages among U.S. Treasury Bond Yields, Commodity Futures and Stock Market
439   Implied Volatility: New Nonparametric Evidence. *Journal of Competitiveness*, 2015, 7, 3, 143-158.
440 [2] Chandrapala P., The Relationship Between Trading Volume and Stock Returns. *Journal of*
441   *Competitiveness*, 2011, 3, 3, 41-49.
442 [3] Wasiuzzaman, S., Determinants of Working Capital Investment: A Study of Malaysian Public Listed
443   Firms. *International Journal of Managerial Finance*, 2015, 11, 1, 60-79. DOI 10.1108/IJMF-01-2013-
444   0016
445 [4] Gurarda, S., M.G. Durak, and A. Kasman, Value Relevance of Accounting Measures in Pre-and Post-
446   Financial Crisis Periods: Turkey Case. *Journal of Finance, Accounting and Management*, 2016, 7, 2, 75-
447   87

[5] Kurowska-Pysz, J. and Szczepańska-Woszczyna, K. The analysis of the determinants of sustainable cross-border cooperation and recommendations on its harmonization. *Sustainability*, 2017, 9, 1, art. no. 2226,

[6] Bakanauskiene, I., Staniuliene, S., Zirgutis, V. Corporate social responsibility: The context of stakeholders pressure in Lithuania. *Polish Journal of Management Studies*, 2016, 13, 1, 18-29.

[7] Paseková, M., Svitaková, B., Kramá, E. and Otrusinová, M. Towards financial sustainability of companies: Issues related to reporting errors. *Journal of Security and Sustainability Issues*, 2017, 7, 1, 141-154

[8] Okafor, O.N., M. Anderson, and H. Warsame, IFRS and Value Relevance: Evidence Based on Canadian Adoption. *International Journal of Managerial Finance*, 2016, 12, 2, 136-160. DOI 10.1108/IJMF-02-2015-0033

[9] Tvaronavičienė, M., Shishkin, A., Lukáč, P., Illiashenko, N., and Zapototskyi, S., Sustainable economic growth and development of educational systems. *Journal of International Studies*, 2017, 10, 3, 285-292

[10] Hedberg, C.-J. and F.v. Malmborg, The Global Reporting Initiative and Corporate Sustainability Reporting in Swedish Companies. *Corporate Social Responsibility and Environmental Management*, 2003, 10, 153–164. DOI 10.1002/csr.038

[11] Kolk, A., A Decade of Sustainability Reporting: Developments and Significance. *Int. J. Environment and Sustainable Development*, 2004, 3, 1, 51-64. DOI 10.1.1.194.5405

[12] Mulkhan, U., Corporate Sustainability Reporting: A Content Analysis of CSR Reporting in Indonesia. *Jurnal Perspektif Bisnis*, 2013. 1(1): p. 73-89. http://publikasi.fisip.unila.ac.id/index.php/administratio_ane/ article/view/133/137

[13] Ansari, N., M. Cajias, and S. Bienert, The Value Contribution of Sustainability Reporting – An Empirical Evidence for Real Estate Companies. *ACRN Oxford Journal of Finance and Risk Perspectives*, 2015, 4, 4, 190-205. http://www.acrn-journals.eu/resources/jfrp0404k.pdf

[14] Loh, L., T. Thomas, and Y. Wang, Sustainability Reporting and Firm Value: Evidence from Singapore-Listed Companies. *Sustainability*, *2017, 9, 2112*, 1-12. doi:10.3390/su9112112

[15] Lourenço, I. C., J. L. Callen, M. C. Branco, and J.´ D. Curto. The Value Relevance of Reputation for Sustainability Leadership. Journal of Business Ethics, 2014, 119, 17–28. DOI 10.1007/s10551-012-1617-7

[16] Farneti, F. and J. Guthrie. Sustainability Reporting by Australian Public Sector Organisations: Why They Report. in Accounting Forum. 2009. Elsevier. http://isiarticles.com/bundles /Article/pre/pdf/32.pdf

[17] Lins, C., R. Althoff, and A. Meek, Sustainability Reporting in the Mining Sector: Value Association and Materiality. Fundacao Brasileira: FBDS, 2008. http://www.fbds.org.br/fbds/IMG/pdf/doc-593.pdf

[18] Gray, R., Social, Environmental and Sustainability Reporting and Organisational Value Creation? Whose Value? Whose Creation? *Accounting, Auditing & Accountability Journal*, 2006, 19, 6, 793-819. DOI 10.1108/09513570610709872

[19] Gray, R. and M. Milne, Sustainability Reporting: Who's Kidding Whom? *Chartered Accountants Journal of New Zealand*, 2002. 81(6): p. 66-70. DOI 10.1108/09513570610709872

[20] Ball, R. and P. Brown, An Empirical Evaluation of Accounting Income Numbers. *Journal of Accounting Research*, 1968(Autumn): 159-178.

[21] Robu, M.A., The Level Of Knowledge In The Value Relevance Literature, 2014, Alexandru Ioan Cuza University of Iasi, Centre for European Studies: Iasi. 123-136. http://www.ceswp.uaic.ro/articles/C ESWP2014_VI4_ROB.pdf

[22] Mohan, N. and F. John, Value Relevance of Accounting Information - An Indian Perspective. *Journal of Finance, Accounting and Management*, 2011, 2, 1, 16-26.

[23] Graham, R.C. and R.D. King, Accounting practices and the market valuation of accounting numbers: Evidence from Indonesia, Korea, Malaysia, the Philippines, Taiwan, and Thailand. *The International Journal of Accounting*, 2000, 35, 4, 445-470.

[24] Cahan, S.F., D. Emanuel, and J. Sun, The effect of earnings quality and country-level institutions on the value relevance of earnings. *Rev Quant Finan Acc*, 2009, 33, 4, 371-391.