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The effect of sustainability report on value relevance of accounting information: Case study of Thai listed firms

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Abstract

The purpose of this study is to test the effect of sustainability report on the value relevance of accounting information. This study's sample included 617 Thai firms that were listed between 2013 and 2017. The sample consisted of 1,409 firm-year observations, and Ohlson (1995) valuation model was used to determine the value relevance of accounting information. According to the results, the interaction coefficient between the sustainability report and book value per share was positive, while the interaction coefficient between the sustainability report and earning per share was negative. These results suggest that sustainable development information is seen in the interests of investors seeking a long-term return on their investment, and that sustainable development data is used to supplement accounting information in decision-making.

Introduction

The sustainability report was developed in the 1970's by adding social report to financial report (Hahn & Kühnen, 2013). In the 1990's, environmental occupational health and safety issues were reported and triple bottom line concepts were introduced in 1997. In this concept, corporate performance is valued and measured across three main pillars of sustainability, i.e., economy, society and environment. As a result, corporations now report their financial (profit) performance and their social and environmental performance (Koç & Durmaz, 2015; Siew, 2015). In the mid 1990's, sustainability report was developed as a tool to help companies manage and balance their business operations with those of the environment and their surrounding communities (Christofi, Christofi, & Sisaye, 2012).

The Global Reporting Initiative (GRI) reporting framework is now widely regarded as "the de facto worldwide standard" for sustainability reports, with the purpose of incorporating information on environmental, social, and governance performance (KPMG, 2011). In 2000, GRI published the first version of such guidelines. Two years later, the second generation of the Guidelines, G2, was launched. The third generation of Guidelines, G3, was released in 2006, and in 2011, the G3.1 Guidelines was presented. In 2013, GRI released the G4 Guidelines, the fourth generation of guidelines. Furthermore, in 2016, GRI established the first global sustainability report standards, the GRI Standard, which enables all companies to publicly report on their economic, environmental, and social impacts and illustrate how they contribute to sustainable development.

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According to a report from the Global Reporting Initiative, 12,964 companies throughout the world published 50,197 sustainability reports on a voluntary basis in 2018 (Global Reporting Initiative [GRI], 2018). In China, 80 percent of corporations disclosed environment social and governance information in 2009, compared to 4 percent in 2005 (Weber, 2014). The survey of KPMG showed that the Asia Pacific region presented 78 percent of the worldwide reporting of corporate responsibility report and the Middle East and Africa presented 52 percent (KPMG, 2017). In Thailand, the Stock Exchange of Thailand has continually focused on promoting the quality of listed companies. In particular, it encourages listed companies to operate their business with regards to balancing the economic, social and environmental management under good governance principles and disclose sustainability information through the preparation of a sustainability report. SET has been training Thai listed companies to obtain awareness on how to prepare corporate social responsibility presented in annual reports and/or sustainability reports in compliance with GRI reporting framework. As a result, a sustainability report in Thailand has become both mandatory and voluntary disclosure. In mandatory disclosure, firms must disclose economic, social, and environmental management information in an annual report filed with SEC, and in voluntary disclosure, firms can conduct a stand-alone report, such as a sustainability report or a corporate social responsibility report using the Global Reporting Initiative (GRI) reporting framework.

Moreover, Thai accountants, auditors, and accounting-related professionals have a positive attitude on environmental and social accounting (Kuasirikun, 2005), and employee information is the most disclosed subject of sustainability in Thai corporate annual reports. The second is environmental information (Kuasirikun & Sherer, 2004). Furthermore, the top 40 Thai companies had increasing quantities of corporate social disclosure between 1997 and 2001, that varied by industry. For example, in the service sector, most service companies provided extensive disclosure on human resources and community themes, but very little on environmental themes. By contrast with the service sector, the most frequent theme disclosed by manufacturing companies was environment theme (Ratanajongkol, Davey, & Low, 2006). Additionally, Suttipun and Stanton (2012) also investigated environmental disclosures on Thai listed companies' websites. According to the findings, 88 percent of the firms presented environment information on their websites and the amount of environmental disclosure varied by industry, ownership status, and type of audit firm.

One of the most interesting research agendas to be examined by researchers connecting to sustainability report is the value relevance of sustainability report. The results of empirical studies on the relationship between sustainability and firm value are equivocal. The first result is that the sustainability report has a positive relationship with the firm's value (Ansari, Cajias, & Bienert, 2015; Carnevale & Mazzuca, 2014; Cormier & Magnan, 2007; Khaghaany, Kbelah, & Almagtome, 2019; Loh, Thomas, & Wang, 2017; Murray, Sinclair, Power, & Gray, 2006). However, other research indicates that sustainability and firm value have a negative association (Hassel, Nilsson, & Nyquist, 2005; Jones, Forst, Loftus, & Laan, 2007; Kaspereit & Lopatta (2011). Some researchers found a negative effect (Hassel et al., 2005; Jones et al., 2007). Furthermore, some results failed to identify an association or were inconclusive about the association. (Clarkson, Fang, Yue Li, & Richardson, 2013; Kaspereit & Lopatta, 2011; Servaes & Tamayo, 2013). As a result, the relationship between the sustainability report and firm value has yet to be concluded.

Unlike other recent research, this research introduces the perspective of a sustainability report which not only has value relevance but also has an impact on accounting information value relevance because recent research shows that firms with sustainability reports improve investors' confidence in using accounting information, resulting in lower earnings forecasts error (Dhaliwal, Li, Tsang, & Yang, 2014; Dhaliwal, Radhakrishnan, Tsang, & Yang, 2012), higher forecasting ability of future earnings (Lourenco, Callen, Branco, & Curto, 2014), and improved financial statement value relevance (Sutopo, Kot, Adiati, & Nrdila, 2018). With a focus on developing nations, particularly Thailand, this study intended to fill that gap by examining whether the sustainability report may increase the relevance of accounting information, especially the value relevance of book value of equity per share and accounting earning per share. When evaluating the use of signaling theory, the adoption of the GRI reporting framework on sustainability reports delivers a more useful signal that a company is presenting investors with higher-quality accounting information.

Literature Review

Signaling Theory

Signaling theory is focus on information asymmetry problem between two parties (Spence, 2002). The first party is the signaler, who are insiders who have information that is not available to outsiders, and the second party is

the receiver, who are outsiders who lack information but want to get the information. The theory describes how information asymmetry is minimized when a signaler sends information to a receiver; as a result, the receiver benefits the signaler by choosing to hire, purchase, or invest in the signaler over other possibilities. (Connelly, Certo, & Ireland, 2011). For example, high-quality prospective employees make the distinction themselves from others by signaling in their education (Spence, 1973), or high-product-quality firms seek to differentiate themselves from low-product-quality firms by signaling the unobservable quality of their products through various marketing-mix dimensions (Kirmani & Rao, 2000). It can be concluded that in the market, purchasers utilize market statistics to assess the quality of potential purchases, and all products are valued at the same price, which is a weighted average of their evaluations. Because customers have no information about specific products, superior product quality vendors will miss their opportunity to profit from possible price increases. This leads to adverse selection phenomena in the market (Akerlof, 1970). As a result, the sellers have incentive for voluntary disclosure in unobserved quality of their product to buyers in order to increase product price that is obtained exceeding signaling cost.

In this study, firms which have information about quality of their accounting information are signalers, and investors who use accounting information to predict the firm value and make a decision in investing are receivers. Firms with higher accounting information quality have an incentive to voluntarily disclose their quality via a disclosure sustainability report in order to increase investor confidence in accounting information's capability to predict firm's market value, and firms that disclose sustainability reports have a greater value relevance of accounting information.

Value Relevance

Value relevance is defined as the capacity of information disclosed in financial statements to forecast the firm's market value (Barth, Beaver, & Landsman, 2001; Ohlson, 1995). The construct value relevance is interpreted in four perspectives by Francis and Schipper (1999). Interpretation 1: Profits produced from implementing accounting-based transaction rules are used to determine value relevance. Interpretation 2: Financial information has value relevance if it contains or assists in a valuation model. Interpretation 3: The statistical correlation assesses whether investors use the information to establish prices, implying that value relevance of financial information can be measured as news and indicating that value relevance information causes investors to revise their expectations, and as a result, the value relevant information causes stock prices to change. And, in Interpretation 4, the capacity of financial statement information effects firm's market value, independent of source, and is estimated by value relevance.

Recent research examined the value relevance of accounting information by determining how relevant it is to equity investors. The value relevance study attempts to examine the association between accounting numbers and a firm's market value (Barth et al., 2001; Francis & Schipper, 1999). The Ohlson (1995) model was used in most prior studies to examine at the value relevance of earnings and book values (e.g. Clarkson et al., 2013; Kaspereit & Lopatta, 2014; Loh et al., 2017). In this model, firm value is defined as a function of book values plus earnings and other information; nevertheless, this model doesn't define the additional information (Ohlson, 1995). According to most past research, earnings and book values are both positively connected to firm value.

Hypothesis Development

One of the most interesting research agendas examined by researchers connected to sustainability report is the value relevance of sustainability report as the results of empirical studies on the relationship between sustainability and firm value are equivocal. Several studies such as those conducted in Europe (Carnevale & Mazzuca, 2014), in the United States and Australia (Ansari et al., 2015), in Singapore (Loh et al., 2017), and in Iraq (Khaghaany et al., 2019), have discovered that there is positively significant association between stock prices and sustainable reports. On the contrary, the study by Clarkson et al. (2013), Jones et al., (2007), Murray et al. (2006), and Servaes and Tamayo (2013) couldn't find the association between stock return and environmental disclosure. The study by Cormier and Magnan (2007) confirmed the moderating impact of stock valuation in France while those of Canada and Germany have no direct significant relationships, which is in accordance with the previous study of Hassel et al. (2005) conducted in Sweden. In sum, there is no conclusive relationship.

This current study extended the knowledge about sustainability report by examining whether the sustainability report can improve accounting information's value relevance especially the value relevance of book value of equity per share and accounting earning per share. In considering the implementation of signaling theory, the implementation of GRI reporting framework on sustainability report provides a more useful signal that

a company is providing a better quality of information for the investors. Recent research shows that firms with sustainability report improve the confidence of investors in using accounting information to make decision as in the work of Dhaliwal et al. (2012), Lourenco et al. (2014), Sutopo et al. (2018). In contrast, Carnevale and Mazzuca (2014) found sustainability report reduced value relevance of book value per share (SR × BPS is negative and significant) and did not influence the relevance of earnings per share (SR×EPS is not significant) of Bank in European stock markets as the additional information reduced the financial statement variables' explanatory power (Carnevale & Mazzuca, 2014). Therefore, considering signal theory and previous research lead to the hypothesis as follows.

H1: Book value of equity per share and accounting earning per share of firms which implement GRI reporting framework on sustainability report have a higher value relevance when compared to their counterparts.

Methodology

Sample Selection and Data Collection Procedure

In this study, the sample used to test the hypothesis consisted of 617 Thai listed firms for the year 2013 – 2017. Firms having complete data for 3,085 firm-year observations were included in the sample. Because of the differential accounting standards by which they are bound, this constraint reduced the sample size to 1,409 firm-year data, reducing the number of observations from the financial industry, firms under rehabilitation, funds, and trusts (Oliveira, Lima, & Craig, 2010), and firms with no available data, Table 1. The data of accounting information and stock price of the firms were collected from the SETSMART, the Stock Exchange of Thailand's Thai listed company information database, while the data of firms providing sustainability report were collected from sustainability disclosure database operated by Global Reporting Initiative (GRI).

Table 1 Derivation of sample 2015–2018

Items	Firm-year
Initial number of observations	3,085
Less observations from Financial industry	(300)
Less observations are firms under rehabilitation	(30)
Less observations are Fund and Trust	(345)
Less observations with no available data	(1,001)
Final observations	1,409

Methods

The aim of this study was to determine the effect of sustainability report on the value relevance of accounting information of Thai listed firms. The interconnectedness of financial and sustainability report enhances the usefulness of accounting information (Baboukardos & Rimmel, 2016). It assumes that such a relationship exits. In order to do so, this study tested whether the interacts between sustainability report and accounting information is value relevant.

The Ohlson (1995) valuation model was used to examine the value relevance of interactions between sustainability reports and accounting information.

The models to test hypothesis are as follows:

$$\text{Model 1: } PR_{it} = a_{01} + b_1 BVS_{it} + b_2 EPS_{it} + e_{it}$$

$$\text{Model 2: } PR_{it} = a_{02} + b_3 BVS_{it} + b_4 EPS_{it} + b_5 GRI_{it} + b_6 BVS_{it}*GRI_{it} + b_7 EPS_{it}*GRI_{it} + e_{it}$$

$$\text{Model 3: } PR_{it} = a_{03} + b_8 BVS_{it} + b_9 EPS_{it} + b_{10} GRI_{it} + b_{11} LEV_{it} + b_{12} ROA_{it} + b_{13} LnAssets_{it} + b_{14} AGRO_{it} + b_{15} CONSUMP_{it} + b_{16} INDUS_{it} + b_{17} SERVICE_{it} + b_{18} TECH_{it} + b_{19} RESOURCE_{it} + e_{it}$$

$$\text{Model 4: } PR_{it} = a_{04} + b_{20} BVS_{it} + b_{21} EPS_{it} + b_{22} GRI_{it} + b_{23} BVS_{it}*GRI_{it} + b_{24} EPS_{it}*GRI_{it} + b_{25} LEV_{it} + b_{26} ROA_{it} + b_{27} LnAssets_{it} + b_{28} AGRO_{it} + b_{29} CONSUMP_{it} + b_{30} INDUS_{it} + b_{31} SERVICE_{it} + b_{32} TECH_{it} + b_{33} RESOURCE_{it} + e_{it}$$

Where:

PR_{it} = market value per share of firm i at year t; BVS_{it} = book value of equity per share of firm i at year t; EPS_{it} = accounting earnings per share of firm i at year t; GRI_{it} = 1 if firm i at year t firm is included in sustainability disclosure database and 0 if not; LEV_{it} = total debt divided by total assets of firm i at year t; ROA_{it} = net income divided by total assets of firm i at year t; $LnAssets_{it}$ = natural log of total assets of firm i at year t; $AGRO_{it}$ = 1 if firm i is listed in Agro & Food Industry and 0 if not; $CONSUMP_{it}$ = 1 if firm i is listed in Consumer Products Industry and 0 if not; $INDUS_{it}$ = 1 if firm is listed in Industrials industry and 0 if not; $SERVICE_{it}$ = 1 if firm i is listed in Services Industry and 0 if not; $TECH_{it}$ = 1 if firm i is listed in Technology Industry and 0 if not; $RESOURCE_{it}$ = 1 if firm i is listed in Resources Industry and 0 if not.

Measure of Dependent Variable

The timeliness of information is an important role in value relevance research. Following Kaspereit and Lopatta (2014), the firm's price (PR) is the market value of the firm three months after the fiscal year ends. This ensures that accounting information and the sustainability report are available to investors, and the information can be reflected in firm's valuation.

Measure of Independent Variable

Book value per share (BVS) and earning per share (EPS) are required to be included in Ohlson's model. Book value per share (BVS) is a firm's book value of equity per share at the fiscal year end and earning per share (EPS) is a firm's accounting earnings per share at the fiscal year end.

Sustainability report (GRI) is a dummy variable which assumes the value 1 if the firm is included in sustainability disclosure database operated by Global Reporting Initiative (GRI) at year t in the sample period, and 0 if the firm isn't included in sustainability disclosure database at year t in the sample period (Kaspereit & Lopatta, 2014).

Measure of Control Variables

In order to fixed the effect of uninterested variables, following prior research, this study used leverage, profitability, firm's size and industry as the control variables, which results in the emergence of nine additional variables (Baboukardos & Rimmel, 2016; Lourenco et al., 2014). Leverage (LEV) is calculated from a firm's total debt divided by its total assets at the end of the fiscal year. Profitability (ROA) is calculated from firm's net income divided by total assets at the fiscal year end. Firm's size (LnAssets) is calculated from natural log of firm's total assets at the fiscal year end, and industry type is represented by a multiple dummy variable obtained from six of the eight industries classified by The Stock Exchange of Thailand.

Results and Discussion

Table 2 presents Pearson's and Spearman's correlation coefficients, as well as variance inflation factors (VIF), for each variable in the study. The correlation coefficients among independent variables range from -0.011 to 0.603, below the cut-off value of 0.80 recommended by Neter, Wasserman, and Kutner (1985), and the VIFs range from 1.232 to 1.907, below the cut-off value of 10 recommended by Neter, Wasserman, and Kutner (1985), indicating that the independent variables are not correlated with each other. As a result, there are no significant multicollinearity issues in this research.

Table 3 reveals the results of the regression analysis. First, the regression findings demonstrate that BVS and EPS have positive (0.049 and 0.723) and significant (.05 and .01) coefficients, indicating that the book value of equity and earnings has an influence on a firms' market value. For control variable, LEV and ROA are negative relationship (−0.480 and −0.474; −0.174, and −0.190); and significant at .01 level, which indicates that leverage and profitability do decrease the market valuation of firms. LnAssets is positive relationship (0.075 and 0.045) and significant at .05 and .01 level, which indicates that a firm size does increase the market valuation of firms. For Industry effects, the results find positive relation in Agro & Food Industry, Consumer Products, Resources, Services and Technology and significant at .01 level, which indicates that firms in Agro & Food Industry, Consumer Products, Resources, Services and Technology industry have higher market value compared with firms in Property & Construction industry, but the results don't find the significant effect of Industrials industry, which indicates that firms in Industrials industry are not different market value compared with firms in Property & Construction industry.

Table 2 Pearson's and Spearman's correlation coefficients and variance inflation factors (VIF) for all variable used in the analysis

Variables	PR	BVS	EPS	LEV	ROA	LnAssets	VIF
PR	1	.504**	.770**	.035**	.308**	.362**	
BVS	.660**	1	.406**	.044**	.022**	.395**	1.329
EPS	.777**	.603**	1	.116**	.507**	.332**	1.907
LEV	-.042**	-.052**	-.011**	1	-.153**	.351**	1.232
ROA	.301**	.123**	.479**	-.276**	1	-.128**	1.616
LnAssets	.349**	.419**	.315**	.380**	-.144**	1	1.546

Note: Pearson's and Spearman's rank correlation coefficients are above and below the diagonal respectively.
*$p < .05$, **$p < .01$.

Table 3 Results of multiple regression analysis

Independent variables	Market value per share			
	1	2	3	4
Constant	3.455**	3.243**	1.255**	1.693**
BVS	0.119**	0.090**	0.079**	0.049*
EPS	0.655**	0.659**	0.692**	0.723**
GRI		0.552**		0.563**
BVS x GRI		0.027*		0.046*
EPS x GRI		− 0.072**		− 0.114**
LEV			− 0.480**	− 0.474**
ROA			− 0.174**	− 0.190**
LnAssets			0.075**	0.045*
AGRO				0.320**
CONSUMP				0.326**
INDUS				0.022
SERVICE				0.678**
TECH				0.286**
RESOURCE				0.410**
F-Value	921.600***	193.281***	178.799**	166.843***
Adjust R^2	.632	.643	.645	.653
Adjust R^2 Change		.011**		.008**

Note: *p < .05, **p < .01.

In addition, the main effect of the relation between voluntary sustainability report and market value of the firm was found to be positive (b = .552 and b = 0.563) and significant at .01 level. The regression results indicate that for voluntary sustainability report by Thai listed firm, investors accumulate sustainability information when they do valuation of a firm listed on the SET. Turning to the main test of this study, the coefficient of the interaction between sustainability report and book value per share (BVS x GRI) was found to be positive (b = .027; b = 0.046) and significant at .05 level. Second, the coefficient of the interaction between sustainability report and earning per share (EPS x GRI) was negative (b = −0.072; b = −0.114) and significant at .01 level. The adjusted R^2 change from .632 in model 1 to .643 in model 2 increased 0.011 and was significant at .01 level and change from 0.645 in model 3 to 0.653 in model 4, increased 0.008 and was significant at .01 level. Thus, the Hypothesis was supported.

The regression results indicate that the adjusted R^2 is significant increase. It is consistent with recent research that shows that firms with sustainability report improve the confidence of investors in using accounting information to make a decision. The implementation of GRI reporting framework on sustainability report provides a more useful signal that a company is providing a better quality of information for the investors, leading to decreased analyst forecast error, and accounting information from companies with sustainability reports has a greater ability to forecast future earnings (Dhaliwal et al., 2012; Dhaliwal et al., 2014; Lourenco et al., 2014; Sutopo et al., 2018). Moreover, sustainable development information has positive effect on market value of firms. According to the signaling theory, sustainability report reduces information asymmetry between manager and stakeholders, particularly shareholders and investors. There is a significant quantity of information in the sustainability report, such as environmental and social expenditures, which inform shareholders, investors and other stakeholders about a firm's proactive sustainability development strategic plan. Such information is not reported in a financial statement, but it is used to assess firm value (Ansari et al., 2015; Carnevale & Mazzuca, 2014; Khaghaany et al., 2019; Loh et al., 2017). In addition, the coefficient of the interaction between sustainability report and book value per share (BVS x GRI) was found to be positive. The result is consistent with Lourenco et al. (2014) and Sutopo et al. (2018). Based on GRI reporting framework, sustainability report will provide information on the associations between the various measures for sustainability, both operational and organizational strategies, as an accompaniment of financial statements. Such provides a more useful signal that a company is providing a better quality of information for the investors. Thus, firms with sustainability report improve the confidence of investors in using book value variable to make a decision. In contrast, this study found a negative effect of the interaction between sustainability report and earning per share (EPS x GRI) and effect of ROA on firm value because profitability alone is not enough for a firm's sustainability growth. If firms lose their organizational legitimacy, they are likely to encounter revenue losses, which affects long-term economic success and future cashflow. As a result, investors are increasingly

interested in non-financial corporate performance (Kaspereit & Lopatta, 2014; Loh et al., 2017). The result of this study provides evidence that investors use sustainable development information to forecast future earnings and assess firm value, leading to the importance of earning in forecasting future earnings to decrease. As a result, there is a decline in the explanatory power of earning variables (Carnevale & Mazzuca, 2014).

Conclusion and Recommendation

The aim of this study was to determine the influence of sustainability report on value relevance of accounting information. In considering the implementation of signaling theory, the implementation of GRI reporting framework on sustainability report provides a more useful signal that firms are providing a higher quality of accounting information for the investors. Previous research shows that firms with sustainability report improve the confidence of investors in using accounting information. Such leads to decreased analyst forecast error, and accounting information from companies with sustainability reports has a greater ability to forecast future earnings (Dhaliwal et al., 2012; 2014; Lourenco et al., 2014; Sutopo et al., 2018). In order to test the hypothesis, the sample used consisted of 617 Thai listed firms for the year 2013–2017. Firms having complete data for 3,085 firm-year observations were included in the sample. Because of the differential accounting standards by which they are bound, this constraint reduced the sample size to 1,409 firm-year data. The accounting-based valuation model established by Ohlson (1995) was used to examine the value relevance of interactions between sustainability reports and accounting information. The results demonstrated that the coefficient of the interaction between sustainability report and book value per share was found to be positive while the coefficient of the interaction between sustainability report and earning per share was negative. The study's implication is that sustainable development information is evaluated through the eyes of investors seeking a sustained return on their investment, and that sustainable development information is used to support accounting information.

The study suggests significant theoretical contributions established in previous knowledge and literature in the field of sustainability report implementation. The conceptual model of this study evolved from application of signaling theory. The results show the interaction between sustainability report and book value per share (BVS x GRI) was found to be positive coefficient. Based on GRI reporting framework, a sustainability report will provide information on the associations between the various measures for sustaining, both operational and organizational strategies, as an accompaniment of financial statements. It provides a more useful signal that a company is providing a better quality of information for the investors. Thus, firms with a sustainability report improve the confidence of investors in using book value variable to make a decision. In contrast, this study found a negative effect of the interaction between sustainability report and earning per share (EPS x GRI) and effect of ROA on firm value because profitability alone is not enough for a firm's sustainability growth. If firms lose their organizational legitimacy, they are likely to encounter revenue losses, which affects long-term economic success and future cashflow. As a result, investors are increasingly interested in non-financial corporate performance. Based on these results, the regulation body like SEC should encourage Thai listed firms to provide information about sustainability management using GRI reporting framework in order to provide a better quality of information for the investors use to forecast future cashflow of the firms.

Moreover, this is a new contribution to academic research to extend the understanding of the subject of sustainability report in developing countries, especially Thailand. Sustainability report in Thailand is both mandatory and voluntary disclosure. In mandatory disclosure, firms have to disclose economic, social and environmental management information in an annual report conducted by the Securities and Exchange Commission (SEC), and in voluntary disclosure, firms conduct the stand-alone report, namely, sustainability report or cooperate responsibility report, according to the Global Reporting Initiative (GRI) reporting framework. This study focused on stand-alone report with the Global Reporting Initiative (GRI) reporting framework. The result reveals that the main effect of the relation between voluntary sustainability report and market value of the firm was found to be positive. It indicates that with voluntary sustainability report by Thai listed firm, investors in Thailand accumulate sustainability information when they do valuation of a firm listed on the SET.

Conflicts of Interest

There is no conflict of interest.

References

Akerlof, G. A. (1970). The market for "lemons" quality uncertainty and the market mechanism. *Quarterly Journal of Economics*, *84*(3), 488–500.

Ansari, N., Cajias, M., & Bienert, S. (2015). The value contribution of sustainability report – an empirical evidence for real estate companies, *ACRN Oxford Journal of Finance and Risk Perspectives*, *4*(4), 190–205. doi: 10.15396/eres2015_111

Baboukardos, D., & Rimmel, G. (2016). Value relevance of accounting information under an integrated reporting approach: A research note. *Journal of Accounting and Public Policy*, *35*(4), 437–452. doi: 10.1016/j.jaccpubpol.2016.04.004

Barth, M. E., Beaver, W., & Landsman, W. (2001). The relevance of value relevance literature for financial accounting standard setting: Another review. *Journal of Accounting and Economics*, *31*(1–3), 77–104. doi: 10.1016/S0165-4101(01)00019-2

Carnevale, C., & Mazzuca, M. (2014). Sustainability report and bank valuation: Evidence from european stock markets. *Business Ethics: A European Review*, *23*(1), 69–90. doi: 10.1111/beer.12038

Christofi, A. Christofi, P., & Sisaye, S. (2012). Corporate sustainability: Historical development and reporting practices. *Management Research Review*, *35*(2), 157–172. doi: 10.1108/01409171211195170

Clarkson, P. M., Fang, X., Yue Li Y., & Richardson G. (2013). The relevance of environmental disclosures: Are such disclosures incrementally informative? *Journal of Accounting and Public Policy*, *32*(5), 410–431. doi: 10.1016/j.jaccpubpol.2013.06.008

Connelly, B. L., Certo, S. T., & Ireland, D. (2011). Signaling theory: A review and assessment. *Journal of Management*, *37*(1), 39–67. doi: 10.1177/0149206310388419

Cormier, D., & Magnan, M. (2007). The revisited contribution of environmental reporting to investors' valuation of a firm's earnings: An international perspective. *Ecological Economics*, *62*(3–4), 613–626. doi: 10.1016/j.ecolecon.2006.07.030

Dhaliwal, D., Li, O. Z., Tsang, A., & Yang, Y. G. (2014). Corporate social responsibility disclosure and the cost of equity capital: The roles of stakeholder orientation and financial transparency. *Journal of Accounting and Public Policy*, *33*(4), 328–355. doi: 10.1016/j.jaccpubpol.2014.04.006

Dhaliwal, D., Radhakrishnan, S., Tsang, A., & Yang, Y. G. (2012). Nonfinancial disclosure and analyst forecast accuracy: International evidence on corporate social responsibility (CSR) disclosure. *Accounting Review*, *87*(3), 723–759. doi: 10.2139/ssrn.1596458

Francis, J., & Schipper, K. (1999). Have financial statements lost their relevance? *Journal of Accounting Research*, *37*(2), 319–352. doi: 10.2307/2491412

Global Reporting Initiative [GRI]. (2018). *Sustainability reporting guidelines*. Amsterdam, the Netherlands: Global Reporting Initiative.

Hahn, R., & Kühnen, M. (2013). Determinants of sustainability report: A review of results, trends, theory, and opportunities in an expanding field of research. *Journal of Cleaner Production*, *59*, 5–21. doi: 10.1016/j.jclepro.2013.07.005

Hassel, L., Nilsson, H., & Nyquist, S. (2005). The value relevance of environmental performance. *European Accounting Review*, *14*(1), 41–61. doi: 10.1080/0963818042000279722

Jones, S., Frost, G., Loftus, J., & Laan, S. D. (2007). An empirical examination of the market returns and financial performance on entities engaged in sustainability report. *Australian Accounting Review*, *17*(43), 78–87. doi: 10.1111/j.1835-2561.2007.tb00456.x

Kaspereit, T., & Lopatta, K. (2014). The value relevance of SAM's corporate sustainability ranking and GRI sustainability report in the European stock markets. *Business Ethics: A European Review*, *25*(1), 1–24. doi: 10.1111/beer.12079

Khaghaany, M., Kbelah, S., & Almagtome, A. (2019). Value relevance of sustainability report under an accounting information system: Evidence from the tourism industry. *African Journal of Hospitality, Tourism and Leisure*, *8*, 1–12.

Kirmani, A., & Rao, A. R. (2000). No pain, no gain: A critical review of the literature on signaling unobservable product quality. *Journal of Marketing*, *64*(2), 66–79. doi: 10.1509/jmkg.64.2.66.18000

Koç, S., & Durmaz, V. (2015). Airport corporate sustainability: An analysis of indicators reported in the sustainability practices. *Procedia - Social and Behavioral Sciences*, *181*(11), 158–170. doi: 10.1016/j.sbspro.2015.04.877

KPMG. (2011). *KPMG international survey of corporate responsibility reporting 2011*. Retrieved from https://www.open.edu/openlearn/ocw/pluginfile.php/387300/mod_resource/content/1/T219_1%20Reading%202%20KPMG%2C%202011.pdf

KPMG. (2017). *Survey of corporate sustainability reporting*. London, UK: author.

Kuasirikun, N. (2005). Attitudes to the development and implementation of social and environmental accounting in Thailand. *Critical Perspectives on Accounting*, *16*(8), 1035–1057. doi: 10.1016/j.cpa.2004.02.004

Kuasirikun, N., & Sherer, M. (2004). Corporate social accounting disclosure in Thailand. *Accounting, Auditing & Accountability Journal*, *17*(4), 629–660. doi: 10.1108/09513570410554588

Loh, L., Thomas T., & Wang, Y. (2017). Sustainability report and firm value: Evidence from Singapore-listed companies. *Sustainability*, *9*(11), 2112. doi: 10.3390/su9112112

Lourenco, I. C., Callen, J. L., Branco, M. C., & Curto, J. D. (2014). The value relevance of reputation for sustainability leadership. *Journal of Business Ethics*, *119*, 17–28. doi: 10.1007/s10551-012-1617-7

Murray, A., Sinclair, D., Power, D., & Gray, R. (2006). Do financial markets care about social and environmental disclosure? Further evidence and exploration from the UK. *Accounting, Auditing & Accountability Journal*, *19*(2), 228–255. doi: 10.1108/09513570610656105

Ohlson, J. A. (1995). Earnings, book values, and dividends in equity valuation. *Contemporary Accounting Research*, *11*, 661–687. doi.org/10.1111/j.1911-3846.1995.tb00461.x

Oliveira, L., Lima R. L., & Craig, R. (2010). Intangible assets and value relevance: Evidence from the Portuguese stock exchange. *The British Accounting Review*, *42*(4), 241–252. doi: 10.1016/j.bar.2010.08.001

Ratanajongkol, S., Davey, H., & Low, M. (2006). Corporate social reporting in Thailand: The news is all good and increasing. *Qualitative Research in Accounting & Management*, *3*(1), 67–83. doi: 10.1108/11766090610659751

Servaes, H., & Tamayo, A. (2013). The impact of corporate social responsibility on firm value: The role of customer awareness. *Management Science*, *59*(5), 1045–1061. doi: 10.2307/23443926

Siew, R. Y. J. (2015). A review of corporate sustainability report tools (SRTs). *Journal of Environmental Management*, *164*, 180–195. doi: 10.1016/j.jenvman.2015.09.010

Spence, M. (1973). Job market signaling. *The Quarterly Journal of Economics*, *87*(3), 355–374. doi: 10.2307/1882010

Spence, M. (2002). Signaling in retrospect and the informational structure of markets. *American Economic Review*, *92*(3), 434–459. doi: 10.1257/00028280260136200

Sutopo, B., Kot, S., Adiati, A. K., & Nrdila, L. N. (2018). Sustainability report and value relevance of financial statements. *Sustainability*, *10*(3), 678. doi: 10.3390/su10030678

Suttipun, M., & Stanton, P. (2012). A study of environmental disclosures by Thai listed companies on websites. *Procedia Economics and Finance*, *2*, 9–15. doi: 10.1016/S2212-5671(12)00059-7

Weber, O. (2014). Environmental, social and governance reporting in China. *Business Strategy and the Environment*, *23*(5), 303–317. doi: 10.1002/bse.1785