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Does Sustainability Reporting Leads to Decrease in Real Earnings Management: Evidence from Indonesia

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Abstract
The evaluation of the impact ofsustainability reportingon real earnings management (RM) is the purpose of this study. The sample of 250 public listed firms on the Indonesian stock exchange (ISE)was used to test the hypotheses over a period of 5 years covering 2014-2018.The study is based on panel data, consisting of 1250 observations and used a fixed-effect (FE) model of regression to perform multivariate regression analysis. The results show that sustainability reporting has a significant and negative influence om REM for the firms quoted on ICM. The findings infer that the firms which are providing sustainability reports regularly are less involved in REM. The managers in these firms are using sustainability reporting as a device to communicate about the sustainability of firm in future and more transparent economic performance. Moreover, the negative association also shows that there is less agency conflict among owner and managers. Apart from theoretical contributions, this study offers implications forpolicy-makers to improve SR practices to improve accounting quality by reducing REM practices by the Indonesian quoted firms.

Keywords**:** *Sustainability reporting,Real earnings management, Indonesian stock exchange (ISE), panel data*

1. Introduction

Today, numerous researchers accept that like privatization and shifting of financial power from governments to national and multinational firms, has limited the role of governments,more and more resources are required to cater the issues of social welfare and environment-related activities. Governments want organizations to help general society for welfare and betterment of society because they are generating income from society. Therefore, they should invest in the people as well from the profits. A lot has been done at the global level to increase the sustainability and this idea is widely accepted at corporate and managerial levels worldwide in last two to three decades (Charoenwiriyakul, Buranannuth, Reungjarungpong, & Jermsittiparsert, 2019), butIndonesian executives and businesses are to some degree not appealed by this idea(Astuti, Zuhrohtun, & Sunaryo, 2019).

One reason that can be provided in this context, inIndonesia, the businesses perceive the SR reporting as an irrelevant disclosure because they think it as another managerial exercise without any benefits. Therefore, the SR is not getting enough attention that it should be. The firms that are adopting the SR practices are not too much encouraging. Figure 1 shows the data regarding the firms' behavior toward SR practices. The financial performance reporting disclosures are increasing, whereas the rate of increases in the other SR reporting component is very slow. Whereas, at this stage, the acknowledgement and understanding of this issue form the firms' side are required for the overall wellbeing of the society (Utama, 2011). There are various perspectives with respect to the authenticity and benefit of embracing the standards of SR by the organization.

A few researchers accept that social issues ought to be understood by the state's government. They accept that the financial capacities of firms are insufficient for taking care of the social issues and ought not be squandered for social welfare (Agarwal, 2016; Fifka & Adaui, 2015; Jamali, El Dirani, & Harwood, 2015; Stoicaa, 2018; Thiel, 2016; Wickert, Scherer, & Spence, 2016). Some researchers, on the other hand, accept that in spite of the fact that the state machinery is answerable for taking care of the social issues, the support of corporations around there is additionally useful. Moreover, they accept that the financial resources are moved from the governments to the private businesses,therefore, taking care of the social issues is indispensable and essential for the private business as well(Khalili, Duecker, Ashton, & Chavez, 2015; Polk, 2015; Yunus, 2017).

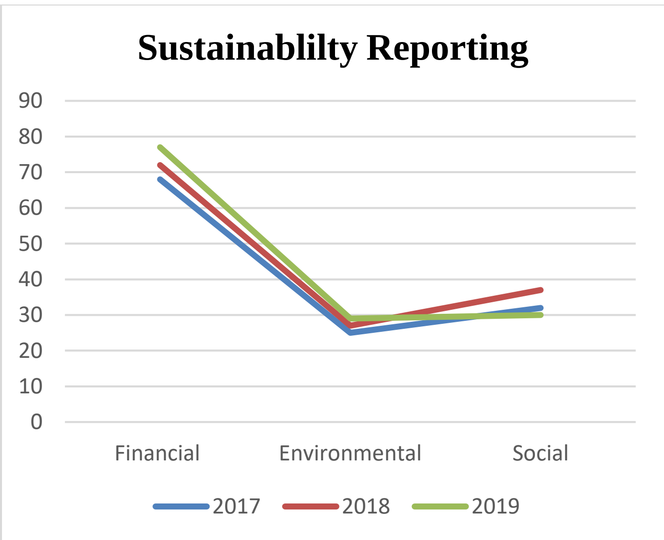

Figure 1: Sustainability Reporting among Indonesian Firms
Source: (Laskar, 2018)

Then again, to address the issue of sustainabilityis expensive to be adopted by the firms. These expenses may incorporate the acquisition of new technologies that will decrease the ecological harms, modifying the administration structure or increasingly strict quality standards. The advantages of adoption of the standards of corporate social responsibility for firms are brand up-gradation and credit facilitation, investingin capital assets because of high business credit, abatement of the dangers of mishaps and severe circumstances, improvement of the workplace and, thus, increment of the benefit and the capacity to pull in and retain staff, which diminishes the costs related to human resource of a firm. Most of the researchers accept that the costs associated with SR are short term only and their advantages are witnessed in the long run. SR is in certainty a sort of practicewith future perspective for increasing sustainability and competitive edge. Senior administration with short-term vision doesn't compromiseon the costs associated to SR (Garcia, Cintra, Rita de Cássia, & Lima, 2016; Karsalari, Aghaee, & Ghasemi, 2017; Madueño, Jorge, Conesa, & Martínez-Martínez, 2016).

Another perspective of SR reporting is that the firms use SR reporting to communicate that they are operating a business that is sustainable in future. Actually, according to many researchers, this move is used to take the attention of the investors away from the financial reports that are going to be managed for personal benefits (Almilia & Budisusetyo, 2009; Laksmi & Kamila, 2018). One of the most popular mechanism is earnings management (EM) practices that are used to mislead investors. The most serious type of EM is real earnings management (REM) that has far-reaching consequences for the future. Therefore, this study is interested to investigate the influence of SR on REM to evaluate whether the firms in Indonesia are using SR to manipulate the earrings in real terms.

2. Literature Review

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Nowadays the most significant issuein the accounting literature is the manipulation of financial statements (Ditkaew, Pitchayatheeranart, &Jermsittipasert, 2020; Jermsittiparsert, Somjai, &Toopgajank, 2020). The main reason behind this is the use of this information for investment decisions by the investors and potential investors.If the information is not transparent, it will result in wrong financial decisions. Moreover, the truthfulness of financial statements on unveiling data about the activities of the organization so as to keep the shareholders updated with firm performance(Wickert et al., 2016).

EM is a significant concern because it results in the manipulation of accounting data through accruals, when drafting financial statements, accruals isa criterion that is used to estimate the quality of financial records. (Achleitner, Gunther, Kaserer, & Siciliano, 2014; Geimechi & Khodabakhshi, 2015). Recently, it has been highlighted that the market is aware of the managerial manipulation practices and managers in the firms are moving accrual-based earnings management to real earnings management because it is difficult to detect (Achleitner et al., 2014; Mirza, Malek, & Abdul-Hamid, 2019c).In recentresearches, it has been contended that organizations do not simply exist togenerate incomes and enhance investors activity, but in addition, it should assume liability for human capital, environment and society. This hypothesis is very true thatSR has become an essential element of the companies. SR is an outcome of economic, legal, moral and humanistic responsibilities and these perspectives elaborate the importance of SR (Astuti et al., 2019; Kheiri, Yazdanpanah, Soleymaninejad, Sajjadi, & Taslimi, 2015; Zheng, Song, & Hao, 2015).

The European Commission considers SR is considered as an idea by European Commission that not only the includesproblems related toenvironment and social disclosure and cooperation of organization to various stakeholders, but it reports the business performance for all aspects. To conclude, we can characterize SR as the prerequisite to meet the desires for external stakeholders, including clients, suppliers, merchants, environmental stakeholders andgeneral public interests, alongside the internal stakeholders, including such as firm’s workforce. Along with this, one of the obligations of the firms SR is to improve the communication about the firm’s performance and the welfare of society through providing disclosures about sustainability.Whereas, recent literature has identified that firms are using SR as a mechanism to communicate the misleading performance through EM practices (Lee & Hwang, 2019; Lizińska & Czapiewski, 2018; Sadeghi, Arabsalehi, & Hamavandi, 2016). A study bySoundararajan and Brown (2016)examined the association among the corporate social responsibly (CSR) and EM. Findings reported that CSR is used as a strategy to improve the positive image of a firm. Moreover, the author claimed that the firm's image is considered in the market as a sustainable firm. Similarly, Sun, Salama, Hussainey, and Habbash (2010)state that, theoretically SR is considered as a competitive strategy in the market but the hidden objective of the SR are many, one of the most important objectives is the concealment of the real performance through the EM practices.

Usman and Amran (2015)disclosure of sustainability reportingand the financial performance of the banking sector in Nigeria. A significantly positive relationship was revealed between SR and financial performance of Nigerian Banks by the outcomes of regression analysis, moreover, further findings revealed that the banks which have shown high profits were involved in EM practices.The investigation also infers that market perceived the significance of CSR due to sustainability development and they are fulfilling their commitment to pay back to society, whereas, actually, by using the positive image, the banks are involved in the manipulation practices(Semenescu & Curmei, 2015).Laksmi and Kamila (2018)investigated the SRon the EM practices in Indonesia. The investigation utilizes a sample of the listed firm in ISE. The findings ofmultiple regression analysis techniques presentedthat four components of disclosures on sustainability have a negative influence on the EM practices. The investigationfurther shows that thatlegal element of disclosure is an important indicator because the enforcement by law can make improvements in disclosures for the overall safety of the stakeholders.

While, Lee and Hwang (2019) and Chung, Yu, Choi, and Shin (2015) discovered that SR had a positive influence on the EM practices. The positive relationship can be explained through the cat that these firms are using SR to disclose information to mislead the investors. In fact, these firms are involved in the EM practices to avoid scrutiny from the stakeholders, pressure groups and authorities. Therefore, it can be argued that, in the literature, a positive or negative relationship is found in the literature on the association among SR and EM (Jordaan, De Klerk, & de Villiers, 2018; Martínez-Ferrero, Garcia-Sanchez, & Cuadrado-Ballesteros, 2015; Toukabri, Jilani, & Jemâa, 2014), whereas, some studies found no association among SRand EM practices(Famiyeh, 2017). These conflicting results infer that the hidden objectives of the SR as a competitive strategy varies from country to country and firms by firms. While one more thing is considerable that, previous studies have considered the only accrual-based earnings management (ABEM) but ignored the real earnings management. While the outcomes of REM is more dangerous than ABEM, therefore, to address this gap this study will assess the impact of SR on REM.

According to agency theory, the EM practices creates the conflict of interest among owners and managersJensen and Meckling (1976) and Mirza, Malek, and Abdul-Hamid (2019a), whereas, SR is used to communicate the information with respect to the sustainability of the firms to stakeholders to reduce agency conflicts (Utama, 2011). Despite the fact that there is no agreement among researchers on this issue, but based on the theoretical grounds of agency theory, SR will reduce the REM practices by the firms. Therefore, the following hypothesis can be developed.

H1: There is a negative and significant relationship among SR and REM.

3. Sampling and Data Collection

This study utilizes the public listed company (PLC) as the unit of analysis. The study is based on a sample of 250 firms that are providing SR in their annual reports quoted in ISE. The sample is based only on non-financial firms. The non-financial firms are excluded because the financial firms have different legal requirements, not applicable for the non-financial firms. The data for the sample is taken for the period 2014-2018. The study has considered only that firms that have complete availably of data for five years. Most of the firms in the sample are industrial firms but the sample also consists of service sector firms. There are 78% of firms that belong to the industrial sector, while 22% of firms belong to services sectors.

The financial data on variables such as REM is taken from the Thomson Reuters Financial DataStream Advance. The data related to the SR is taken was obtained directly from the annual report section on sustainability reporting of the financial reports. For the final sample of 250 firms, 1250 annual reports were downloaded from the internet covering the period from 2014-2018.

3.1 Variables Measurement

3.1.1 Reals Earnings Management

REM is operationalized based on REM metrics. Following Roychowdhury (2006), three measurements are considered: abnormal cash flow from operations, abnormal discretionary expenses, and abnormal production costs. These definitions are used in numerous other studies as a single matrix based on three proxies, including (Achleitner et al., 2014; Cohen & Zarowin, 2010). The equations for calculation for the REM matrix are given below.

3.1.2 Abnormal levels of cash flow from operations

$$CFO\ t/At\text{-}1=\alpha o+\alpha 1(1/At\text{-}1) + \alpha 2(St/At\text{-}1) + \alpha 3(\Delta St/At\text{-}1) + £t \qquad (1)$$

Where CFO_t, cash flow from operations at time t; $_{1/At\text{-}1,}$ lagged total assets; S_t, sales at time t; ΔSt, change in sales from time t-1 to time t ($\Delta S_t = S_t - S_{t-1}$). All variables in Equation(1) are scaledby lagged total assets (At-1).

3.1.3 Abnormal levels of discretionary expenses

$$DISC\_EXP\ t/At\text{-}1 = \alpha o + \alpha 1(1/At\text{-}1) + \alpha 2(St/At\text{-}1) + £_t \quad (2)$$

where DISC_EXPt, discretionary expenses at time t; At-1, lagged total assets; St-1, lagged sales. The residuals of Equation (2) are the estimate of abnormal discretionary expenses.

3.1.4 Abnormal levels of production costs

$$PROD\ t/At\text{-}1 = \alpha o + \alpha 1(1/At\text{-}1) + \alpha 2(St/At\text{-}1) + \alpha 3(\Delta S/At\text{-}1) + \alpha 4(\Delta St\text{-}1/At\text{-}1) + £_t \quad (3)$$

where $PROD_t$, production costs at time t (defined as $COGS_t + \Delta INV_t$); A_{t-1}, lagged total assets; S_t, sales at time t; ΔS_t, change in sales from time t-1 to time t ($\Delta S_t = S_t - S_{t-1}$).

Finally, followingCohen and Zarowin (2010), the overall matrix of REM is developed by measuring all three real activities consistent with previous studies (Martínez-Ferrero et al., 2015; Sun et al., 2010; Toukabri et al., 2014).

3.1.5 Sustainability Reporting

Three components of SR are considered in this study as per the global reporting initiative (GRI). These are financial performance, social, andenvironmental disclosure, as part of SR published in the annual statement.Economic performance disclosure is based on theguidelines of GRI is based on 8activities. Environmentperformance disclosure consisting of 34components, and socialperformance disclosure comprising of 42components.The operationalization of this is done by constructinga disclosurescore. If a firm discloses data related to any of these activities then it is allocated a score 1, otherwise 0. Then, scoring is finally calculates based on the percentage of the total activities achieved divided by the number of total activities as suggested by GRI guidelines. This operational definition has been used in many of the prior studies calc on the disclosure towardall items of disclosure in GRI(Almilia & Budisusetyo, 2009; Astuti et al., 2019; Sun et al., 2010; Toukabri et al., 2014).

3.2 Regression Model

The regression model developed to test the hypotheses is presented below: Finally, the study included a dummy variable to control for the possible year effects that represent the unobservable firm effects (unobservable heterogeneity) in the error term to provide robust evidence to the main results. Several prior empirical studies, including value relevance studies, have controlled the year effects to infer the unbiased statistical results as suggested by (Greene, 2012).

$$REM_{it} = \beta 0 + \beta 1 SR_{it} + \beta 2 Years_{it} + \varepsilon_{it} \quad (1)$$

Where:

REM_{it}: Real earnings management by the firm i in year t.

SR_{it}:It is the indicator of the SR score for firm i in year t.

*$Years_{it}$: Time dummies*for firm i in year t.

4. METHOD AND RESULTS

4.1 Descriptive Statistics

According toGreene (2012), initially,it should be assessed whether the data normal or non-normal. for normality. Therefore, this study has calculated the descriptive statistics to assess the normality in the data. Results are presented in Table 1. All variables are normally distributed based on the results of the skewness and kurtosis. After performing the descriptive analysis of the variables, the Shapiro-Wilk was also calculated for all variables in the study. The findings of the test show that $p>0.10$ for all variables. Therefore, it represents the presence of normality in the distribution of the data. Moreover, this study is based on 1250 observations, that is a large sample so the results will be reliable. The results of the descriptive analysis further show that the mean value of SR is 48 %,which shows that averagely 48% guidelines given by the GRI are being followed by the companies. The mean value of REM is .0003174, which shows the presence of REM practices by the Indonesian firms.

Table 1
Descriptive Statistics

Variable	Mean	Min.	Max.	St.D	Skewness	Kurtosis	Shapiro-Wilk
SR	48.09439	27.3	79.42	14.15134	-0.02166	2.265394	0.1039
REM	0.003174	-0.71437	0.803238	0.185598	-0.54641	5.980838	0.0900

REM = Real earnings management, SR= SR Score

4.2 Multicollinearity

A Pairwise correlation was performed for all the variables. The results are presented in Table 2 below. The findings show the dependent variable, REM, has a negatively significant correlation (-0.78) with the independent variable SRat 1% significance level. These findings show that there is an existence of the inverse relationship between two variables. If a firm increases his compliance with GRI, ultimately it will reduce the REM practices by the firms.

Table 2
Correlation Matrix

	REM	SR
REM	1	
CSR	-0.78*	1

Significance level (0.01,0.05**,0.10***)*
REM = Real earnings management, SR= SR Score

4.3 Diagnostic Tests

The data is further tested for detecting the issue of serial correlation and heteroskedasticity.Serial correlation occurs when a variable measured at a specific time period for a firm correlates with that same firm's variable measured at a different time period. Since this study used a sample of five years' data, the error term from the regression is likely to be correlated over time.Heteroskedasticity (hetro) occurs when error terms result in unequal variances. According to Cai and Hayes (2008), homoscedasticity is another important assumption of OLS regression that is not likely to be valid in several applied settings and its outcome is hetero. Therefore, the current study has decided to perform the Wooldridge statistics for serial correlation, Breusch-Pagan test for hetero to evaluation the existence of these issues. The results are provided in Table 3. The value of Chi^2 statistics serial correlation test is 6.978 and the p-value<0.01. Therefore, it shows the presence of serial correlation. The value of Chi2of heteroskedasticity statistics is 2545.63 and the p-value<0.01. Therefore, it shows the issue of heteroskedasticity in the data.

Table 3
Test for serial correlation and heteroskedasticity

Wooldridge test for Serial-Correlation		Breusch-Pagan/ for Heteroskedasticity	
F Value	6.978	Chi^2	2454.63
Prob > F Value	0.000	Prob >Chi^2	0.000

4.4 Multivariate Regression Analysis

This study is based on panel data. The main reasons behind using the panel data are that, in comparison to cross-sectional data, panels are more appealing because it normally provides more information compared to the single cross-sections and thus results in increased precision of the estimation. Moreover, the panel data method pays attention to the individuality of each firm and computes intercepts unique for each firm utilizing pooled OLS, fixed-effects (FE) or random-effects (RE) regression models (Greene, 2012).Therefore,

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as suggested by Baltagi (2005), the first question that arises with the application of panel data is whether or not to pool the data. The author suggested the Lagrange Multiplier (LM) test to determine whether the pooling of data is appropriate or not. The null hypotheses of the LM test specify that the variance of random effects is equal to zero. If this is the case, then pooled OLS is appropriate, otherwise alternative hypotheses is accepted i.e. RE model. The results of the LM test are presented in Table 4 below. The result shows that the Chi^2 value is 2012.87 and the p-value<0.01. If p-value<0.05, then the null hypothesis is rejected. The rejection of the null hypothesis specifies that the variance of random-effects is not equal to zero, and the RE model is appropriate for the regression model.

Table 4
Breusch and Pagan Lagrange Multiplier Test for Random-Effects vs Pooled Effect

LM Test	
Chi^2	2012.87
Probability > Chi^2	0.00

After meeting the validity assumption of the RE model, the subsequent step is either to rely on the RE or FE model. This decision is based on the Hausman specification test (1978) (Baltagi, 2005; Greene, 2012), which provides the answer to the question, which model is appropriate. The Hausman test compares the coefficient of the FE and RE models. The test is based on the null hypothesis that the difference between the coefficients of the RE and FE models is not systematic. The acceptance of the null hypotheses results in the selection of the RE model. Based on findings provided in Table 5 below, the value of Chi^2 statistics is 1010.81, and p-value<0.01 for both models; the significant p-value shows that difference between the coefficients of the RE and FE models is systematic. Therefore, the null hypothesis is rejected, and the alternative hypothesis is accepted. Therefore, the FE model is appropriate to perform a multivariate regression analysis for the regression model.

Table 5
Hausman Specification Test for Random-Effects vs Fixed-Effects

Hausman Test	
Chi^2	1010.81
Probability> Chi^2	0.00

To further assess the presence of the heteroskedasticity in the FE model, Modified Wald test was used to assess the group-wise heteroskedasticity in the panel data as suggested by Greene (2012) in FE regression model. In the panel data context, this assumption may be violated in many ways. The error term may be homoscedastic within cross-sectional units, but its variance may be different across units, referred to as group-wise heteroskedasticity (Baum, 2001). According to Greene (2012), the null hypothesis is not group-wise heteroskedasticity; and if the null hypothesis is rejected, then it shows the presence of group-wise heteroskedasticity. Table 6 below reports the value of Chi^2 statistic at 390000000 in regression Model, with corresponding p-value<.01, indicating that, if p-value<0.05, then the null hypothesis of no group-wise heteroskedasticity is rejected for both models. This shows the presence of group-wise heteroskedasticity in the FE model.

Table 6
Modified Wald Test for Group-wise Heteroskedasticity In Fixed Effect Model

Modified Wald Test	
Chi^2 (250)	390000000
Probability > chi^2	0.00

Therefore, this study will use the FE model for multivariate regression with robust standard errors as suggested by Hoechle (2007) to deal with the issue of serial correlation, hetro and group-wise hetro. Results ofmultivariate regression analysis are given in Table 7 below.

The R^2 is 39%, independent variables, SR explains 39% variation towards the dependent variable REM as shown in Table 7. The results of the regression show the negative and significant association among sustainability reporting (SR) and real earnings management (REM) (β=-4.740, $p<0.05$), supporting H1. This finding shows that sustainability reporting is a very important tool in the context of Indonesia because the high-quality SR is helpful in reducing REM practices by the firms. These results are also supported by the agency theory, SR reduces the conflict of interest among owners and managersJensen and Meckling (1976), thereby reducing the manipulative practices by the management and improves accounting quality that is helpful for investors in investment decision making (Mirza, Malek, & Abdul-Hamid, 2019b). Moreover, it is the best tool that communicates the performance of the firm from every respect not only the financial performance, in turn,but stakeholders also get information that they need for investment decision making and managers involve themselves less in REM activities. Moreover, these results are in line with the previous studies that argued that firms that are engaged in good quality SR, theses firm are less involved in EM practices and offer better accounting quality(Chung et al., 2015; Laksmi & Kamila, 2018; Lee & Hwang, 2019; Semenescu & Curmei, 2015). Overall, it can be concluded that SR reporting is the best mechanism to deal with agency issues and in the modern world, the best way to develop a competitive advantage to improve the positive image of a firms and financial reporting quality as well.

Table 7
The Association Among SR and REM

Dependent Variable REM			
Variable	Beta Coefficient	t-Statistics	P-Value
SR	-0.112	-4.740	0.029*
2015	0.210	7.770	0.020*
2016	0.140	9.090	0.000*
2017	-0.017	-0.570	0.566
2018	0.154	4.120	0.000*
Constant	-1.712	-1.720	0.086
R^2	39%		
Observations	1250		

Significance level (0.01,0.05**,0.10***)*

REM = Real earnings management, SR= SR Score

5. Conclusion, Practical Implications, Limitations and Directions for Future Research

5.1 Conclusion

The issue of SR is currently under discussion due to its implications for the wider interest of the stakeholders. Moreover, SR has also implications for investment decision making, so its transparency is utmost important. Therefore, this issue is examined in Indonesia as a developing countries' context. For the examination, 250 firms quoted on ISE were taken to test the hypotheses. This paper offers significant contributions to the present discussion on this association. This study found a significantly negative relationship among SR and REM based on the most recent data from Indonesia. The findings demonstrate that SR is a vital and important tool to reduce the managerial manipulations practices by the firms. Moreover, the firms that enhance its SR practices, its image will be improved in the market and it will reduce the conflicts among owners and managers, thereby, will result in better accounting quality.

5.2 Practical Implications

This study has several practical implications for the regulators in Indonesia. Especially concerning SRdisclosures, the finding shows a significantly negative association among SR and REM. The issue has significant implication for the stakeholder's interest. The regulators should focus on enhancing the SR practices of the listed firm.This will help to reduce not only agency conflicts but will improve accounting quality for decision making.This strategy will be helpful to improve the security aboutthe interest of all stakeholders especially shareholders. Moreover, regulators should introduce legal actions against the firms, which are not abiding by the SR practices to save the interest of the stakeholders including shareholders.

5.3 Limitations and Directions for Future

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Research

This study is havingnumerouslimitations. First, this study is based onIndonesian listed firms. Thus, the results cannot be generalized to other developing countries due to the difference in the social, environmental and legal environment.To overcome this limitation,the conceptual framework should be tested in different legal andsocial environments. Moreover, this study uses REM as a proxy to measure earnings management. There are other proxies available to measure EM such as accrual-based earnings management. The study used the disclosure score to measure SR practices, the researchers should also consider the individual component of SR on EM practicesto gain a deeper understanding of this issue. The current study also offers a unique avenue for future research. This study is based on the non-financial firms listed on ISE and ignored the financial sector. Therefore, this framework should be applied to the listed financial institutionspecifically banks. This study has taken REM as a measure of accounting quality. Additionally, the other measures of accounting quality should be tested such as value relevance, informativeness and accounting conservativism. Therefore, future researches should consider the above-mentioned recommendations for understanding this issue in detail.

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