

Impact of Environmental Reporting on Firm Performance of Listed Companies from High Environmental Impact Industries in Thailand*

Received: February 7, 2023

Revised: April 11, 2023

Accepted: April 18, 2023

Dr.Muttanachai Suttipun

Associate Professor of Department of Accountancy,
Faculty of Management Sciences, Prince of Songkla University

Siriwan Leelatiwanon

Student in Master of Accountancy Program,
Faculty of Management Sciences, Prince of Songkla University

Dr.Jittima Wichianrak

Lecturer of Department of Accountancy,
Faculty of Management Sciences, Prince of Songkla University
(Corresponding Author)

ABSTRACT

The study aims to investigate the extent and level of environmental reporting of listed companies from high environmental impact industries in the Stock Exchange of Thailand (SET), and to examine the impact of environmental reporting on firm performance by using 815 firm-year observations from 2016 to 2020. Content analysis is used to quantify the extent and level of environmental reporting on annual reports of listed companies from high environmental impact industries in the SET. While firm performance and other characteristics data have been collected from the SET Database (SETSMART). Descriptive analysis, correlation matrix, and multiple regression analysis are used to analyze the data in this study. As a result, the most environmental reporting is the waste followed by energy, CO₂ emission, biodiversity, water, material, environmental compliance, and environmental assessment. In addition, the average environmental reporting was 583.60 words. There is a negative impact of environmental reporting on firm performance in Thailand. Firm size, risk, and ownership status

* ผลงานนี้ ได้รับทุนอุดหนุนการวิจัยจากสถาบันวิจัยและพัฒนา มหาวิทยาลัยสงขลานครินทร์ ประเภททุนพัฒนานักวิจัยใหม่ รหัสโครงการวิจัย MAN6502033S

also have correlated with firm performance. The finding support stewardship theory, environmental reporting may be used as a management tool of top-management and family-owned shareholders to manipulate corporate financial reports.

Keywords: Environmental Reporting, Firm Performance, High Environmental Impact Industries, Stewardship Theory, Thailand

ผลกระทบของการรายงานด้านสิ่งแวดล้อมต่อผลการดำเนินงานทางการเงิน ของบริษัทจดทะเบียนในตลาดหลักทรัพย์แห่งประเทศไทย ในกลุ่มอุตสาหกรรมที่ส่งผลกระทบสูงต่อสิ่งแวดล้อม

วันที่ได้รับต้นฉบับบทความ : 7 กุมภาพันธ์ 2566

วันที่แก้ไขปรับปรุงบทความ : 11 เมษายน 2566

วันที่ตอบรับตีพิมพ์บทความ : 18 เมษายน 2566

ดร.มัทนชัย สุทธิพันธุ์

รองศาสตราจารย์ประจำสาขาวิชาการบัญชี
คณะวิทยาการจัดการ มหาวิทยาลัยสงขลานครินทร์

ศิริวรรณ ลีลาทิวานนท์

นักศึกษาในหลักสูตรบัญชีมหาบัณฑิต
คณะวิทยาการจัดการ มหาวิทยาลัยสงขลานครินทร์

ดร.จิตติมา วิเชียรรักษ์

อาจารย์ประจำสาขาวิชาการบัญชี
คณะวิทยาการจัดการ มหาวิทยาลัยสงขลานครินทร์
(ผู้ประสานงานหลัก)

บทคัดย่อ

งานวิจัยนี้มีวัตถุประสงค์ เพื่อศึกษาขอบเขตและระดับการรายงานด้านสิ่งแวดล้อม ของบริษัทจดทะเบียนในตลาดหลักทรัพย์แห่งประเทศไทย (SET) ในกลุ่มอุตสาหกรรมที่ส่งผลกระทบสูงต่อสิ่งแวดล้อม และเพื่อทดสอบผลกระทบของการรายงานด้านสิ่งแวดล้อม ที่มีต่อผลการดำเนินงานของบริษัท โดยเก็บข้อมูล 815 หน่วยตัวอย่างระหว่างปี พ.ศ. 2559 ถึง 2563 ใช้การวิเคราะห์เนื้อหาสาระของการรายงาน เพื่อศึกษาขอบเขตและระดับของการเปิดเผยในรายงานประจำปีของบริษัทในกลุ่มอุตสาหกรรมที่ส่งผลกระทบสูงต่อสิ่งแวดล้อม ในตลาดหลักทรัพย์แห่งประเทศไทย ในส่วนของผลการดำเนินงานของบริษัทและตัวแปรอื่น ๆ จะเก็บข้อมูลจากฐานข้อมูลของตลาดหลักทรัพย์ (SETSMART) งานวิจัยนี้ใช้การวิเคราะห์เชิงพรรณนา สหสัมพันธ์ และการถดถอยเชิงเส้นพหุคูณ ผลการวิจัยพบว่า โดยส่วนใหญ่มีการรายงานการใช้พลังงาน ตามมาด้วยการปล่อยก๊าซคาร์บอน ความหลากหลายทางชีวภาพ น้ำ วัสดุ การปฏิบัติตามข้อกำหนดด้านสิ่งแวดล้อม และการประเมินด้านสิ่งแวดล้อม ตามลำดับ โดยมีการรายงานข้อมูลด้านสิ่งแวดล้อมเฉลี่ย 583.60 คำ การรายงานด้านสิ่งแวดล้อม ส่งผลกระทบเชิงลบต่อผลการดำเนินงานของบริษัทในประเทศไทย ส่วนขนาดของกิจการ ความเสี่ยง และสถานะความเป็นเจ้าของ มีความสัมพันธ์ต่อผลการดำเนินงานของบริษัท ผลการศึกษาสนับสนุนทฤษฎีผู้พิทักษ์ผลประโยชน์ โดยการรายงานด้านสิ่งแวดล้อมจะถูกใช้ เป็นเครื่องมือในการบริหารจัดการของผู้บริหารระดับสูงและของผู้ถือหุ้นที่เป็นลักษณะครอบครัวในการจัดการรายงานทางการเงินของกิจการ

คำสำคัญ : การรายงานด้านสิ่งแวดล้อม ผลการดำเนินงานของบริษัท กลุ่มอุตสาหกรรมที่ส่งผลกระทบสูงต่อสิ่งแวดล้อม
ทฤษฎีผู้พิทักษ์ผลประโยชน์ ประเทศไทย

1. INTRODUCTION

Environmental impact is understandably influenced by corporate economic development and growth. There are several problems created and linked by corporate actions and activities such as pollution and global warming. Therefore, the idea of corporate environmental responsibility is used to work together with corporate economic management. This is because environmental responsibility and management do not focus on only some groups of stakeholders such as shareholders, investors, or creditors, but also the other groups of stakeholders such as workers and labors, customers, suppliers, competitors, government organizations, society and community, and environmental lobbies. Moreover, the balance between environmental and economic management can enhance corporate sustainable development (Elkington, 1998). Compared with corporate traditional reporting, which mostly aimed to provide only financial information, environmental reporting will provide non-financial information in the same media as corporate annual reports. This is because environmental disclosure is used and reported to increase accountability and transparency.

The impact of environmental reporting on corporate performance can happen in two different directions (Mahadeo, Oogarah-hanuman, & Soobaroyen, 2011). On the one hand, agency theory explains the conflict of interest problems between owners (shareholders) and top-management as managers act to pursue their own goals (Thuy, Khuong, Anh, & Quyen, 2022). Moreover, shareholders may have less corporate information, when the top-management was not reporting, as a result, this leads to the information asymmetry problem. One of the tools that top-management will use to provide corporate information is sustainability reporting which includes environmental information. However, there has a cost of disclosure, therefore, the top-management may have to balance between the cost and benefit of the disclosures. As a result, environmental reporting is used to reduce conflict of interest between owners (shareholders) and top-management as well as to close or to decrease the problem of information asymmetry and agency cost in the corporations. Furthermore, environmental reporting is a part of corporate communication to convey corporate governance to their stakeholders, resulting in a positive image and reputation to increase the value of the business (Lubis, Pratama, Pratama, & Pratami, 2019). This links the relationship between corporate governance and performance. Therefore, the results of reduction of agency cost, information asymmetry, and conflict of interest can lead the corporations to have better and higher performance. On the other hand, stewardship theory explains the accountability between the principal (shareholders) and steward's agent (management) based on overlapping interests and goals and It is more reasonable to trust the self-management which will be accountable and lead the corporations to the goals (Schillemans & Bjurstrøm, 2020). The management stewardship may focus on the long-term improvement of both financial and non-financial CSR activities to create long term value for all stakeholders (Rezaee, Alipour, Faraji, Ghanbari, & Jamshidinavid, 2021) in other word, from period studies may lead to more spending and low financial performance in short term.

***Impact of Environmental Reporting on Firm Performance of Listed Companies
from High Environmental Impact Industries in Thailand***

Environmental reporting may be used to contribute the positive image to their stakeholders. The rising level of public scrutiny could be expected due to some questionable nature of their actions and activities. The opportunistic tendency could be expected in firms with high environmental commitment (Atkins, 2006; Kim, Park, & Wier, 2012). In this regard, firms may engage in environmental as a form of reputation insurance, which then gives them a ‘license to operate’ with respect to corporate performance. Therefore, environmental reporting and management can cost the corporations and reduce their performance.

However, the previous related studies of the impact of environmental reporting on firm performance were mixed and inconclusive. Although most prior literature found a positive impact of environmental reporting on corporate performance (Almeyda & Darmansya, 2019; Gatimbu & Wabwire, 2016; Jagannathan, Liberti, Liu, & Meier, 2017; Purnomo & Widianingsih, 2012; Yoon, Lee, & Byun, 2018; Zamil & Hassan, 2019), some found a negative relationship between both variables (Kim, Li, & Li, 2014; Stanwick & Stanwick, 2000). In addition, many studies have focused on only developed economic countries such as European countries, Australia, New Zealand, Japan, Singapore, South Korea, and the United States of America (Kim et al., 2012; Le, 2020; Stanwick & Stanwick, 2000; Yoon et al., 2018) rather than emerging economic countries (Gatimbu & Wabwire, 2016; Mohamed, Flynn, & Grey, 2019; Purnomo & Widianingsih, 2012), especially in Thailand (Suttipun & Yordudom, 2022). Therefore, the result of the impact of environmental reporting on corporate performance in Thailand is still unknown in terms of direction.

Listed companies from high environmental impact industries in the Stock Exchange of Thailand (SET) are used as population and sample in this study for some reasons. This is because the global society has focused on transitioning to the corporate green/environmental economy, particularly in high environmental impact sectors (Noranarttakun & Pharino, 2021). The growth of environmental concern and responsibility pushes corporations to seriously consider their strategies for their actions and activities (Le, 2020). Stakeholders and governors force them to shape the green business paradigm. In Thailand, the green business industry was created by Thailand Ministry of Industry since 2010. As the firms which are committed to environmental responsibility, the green business industry is constantly expanding and refining its production methods and environmental management, as well as introducing corporate social responsibility (CSR) in both internal and external processes of the supply chain (Ministry of Industry, 2017). Moreover, Thailand made an agreement of the Paris Agreement on 21 September 2016 (UNTC, 2021), which target to keep the global overall temperature below 2 degrees Celsius (UN, 2021). Those concerns will affect the corporate operation and reporting.

From the research problems above, this study aims to investigate the extent and level of environmental reporting on corporate annual reports from 2016 to 2020 of listed companies from high environmental impact industries in the Stock Exchange of Thailand (SET), and to examine the impact of environmental reporting on firm performance. Therefore, there are two main research questions which are (1) what is the extent and level of environmental reporting on corporate annual reports from 2016

to 2020 of listed companies from high environmental impact industries, and (2) is there an impact of environmental reporting on firm performance.

The results reveal that the average environmental reporting was 583.60 words and the most common environmental reporting topic are the waste, energy, and CO₂ emission. Moreover, different levels of environmental reporting within the high environmental impact industries have been found. Furthermore, there is a negative impact of environmental reporting on firm performance. Firm size, risk, and ownership status also impact firm performance.

There are several contributions expected in this study. Firstly, the study's findings will shed light on the extent and level of environmental reporting of listed companies from high environmental impact industries on the SET in Thailand as well as the impact of its reporting on corporate performance. This study also endeavored to validate the relevance and applicability of environmental reporting to corporate sustainable development. Finally, the study's results will demonstrate whether agency theory or stewardship theory can explain the extent and level of environmental reporting in Thailand as well as the influence of environmental reporting on corporate performance.

The remainder of this study is divided into four sections. The first section offers literature review including theoretical perspectives and hypothesis development. The research methodology is outlined in the second section which is separated into three topics as population and sample, data collection and variable measurement, and data analysis. The third section indicates the research findings and discussions. Finally, the study concludes with summary and suggestion for future study including contributions and implications, and limitations.

2. LITERATURE REVIEW

Theoretical Perspective

There are two possible theories that can be used to explain the impact of environmental reporting on corporate performance, even though the directions of impact are totally different. There are agency theory and stewardship theory. In terms of agency theory, on the one hand, environmental reporting is regarded as an important mechanism for resolving conflicts of interest between shareholders and top-management (Jensen & Meckling, 2019). This is because the reporting can be tracked and regulated top-management's decision-making power resulting in resolving conflicts of interest, shareholders are protected against information asymmetry (Thuy et al., 2022). Environmental reporting processes are also required to ensure that the company's interests are aligned with those of all groups of shareholders (Odat, Al Daoud, & Zurigat, 2021). For example, the shareholders (principals) may like their business organization to pay more dividends when the organization has high profit, but the top-management (agent) would like to put the profit for investment into non-current assets. This can lead to the conflicts

of interest. According to (Melé, 2008), the conflicts of interest can increase agency costs and reduce the corporate value as a result of disagreements regarding benefits, the problem of moral hazard, and the adverse selection problem. Moreover, increased agency costs contribute to a lowering in the liquidity of corporate stock price, poor reputation, higher capital costs, and low firm value (Haniffa & Cooke, 2002). Therefore, the result of reduction of agency cost, information asymmetry, and conflict of interest can lead the corporations to have better and higher performance.

On the other hand, stewardship theory will be used to explain the negative impact of environmental reporting on corporate performance in this study. According to the stewardship theory, top-managers are collectivistic. Therefore, they tend to engage in environmental reporting due to ethical reasons rather than being financially motivated. In this theory, environmental capital and corporate sustainable financial performance stem from having a good relationship with various stakeholders (Donaldson & Preston, 1995). In this respect, investing in environmental reporting is used as a corporate strategy that can enhance and sustain a corporate's reputation (Mohmed et al., 2019). The management will focus on the long-term financial and non-financial CSR activities to create long term value for all stakeholders (Rezaee et al., 2021). As a result, engaging in environmental reporting may constrain manager's opportunistic tendency with respect to earnings management, thereby should deliver more transparent and reliable financial information to the investors (Atkins, 2006; Kim et al., 2012). Moreover, environmental reporting may be used to contribute the positive image to their stakeholders. The rising level of public scrutiny could be expected due to some questionable nature of their actions and activities. The opportunistic tendency could be expected in firms with high environmental commitment. In this regard, firms may engage in environmental as a form of reputation insurance, which then gives them a "license to operate" with respect to corporate performance. Therefore, environmental reporting and management can cost corporations and reduce their performance.

Environmental Reporting and High Profile Industries in Thailand

There have been several studies emphasizing those companies operating in environmentally sensitive industries, or high polluting companies (high profile). For example, the study of Suttipun and Stanton (2011) examined 75 Thai listed companies. They found that the resource industries report the most environmental information. Suttipun and Stanton (2012a, 2012b) observed the top 50 listed companies the findings imply that the low profile companies (lower environmentally sensitive industries, or high polluting companies), private companies, and companies audited by Non-Big 4 have lesser environmental disclosures. Those studies separated Agro & Food Industry, Industrials Industry, and Resources Industry as high profile industries. As same as, Wichianrak, Wong, Khan, Siriwardhane, and Dellaportas (2021) studied environmental disclosures within High profile industries such as Agro & Food Industry, Industrials Industry, and Resources Industry as high profile industries. However, Wuttichindanon (2017) examined 137 listed companies in high environmental impact industries such as resources, industrial,

and technology industry in 2014. The results of the study found that the companies in high profile industries when their disclosure the CSR information, the environmental information is not the main focus. However, the results of those studies are still inconclusive, therefore this study is design to observe the high profile industries.

Hypothesis Development

Listed companies in Thailand are asked by the Stock Exchange of Thailand (SET) to disclose environmental information in their annual reports since 2015 as mandatory reporting (SET, 2018). Corporate environmental reporting in Thailand has adopted the guideline of the Global Reporting Initiative (GRI) Standards in environmental perspective (Code300). In the environmental reporting perspective of GRI Standards Code300, there are eight sub-categories which are materials (Code301), energy (Code302), water (Code303), biodiversity (Code304), CO₂ emission (Code305), waste (Code306), environmental compliance (Code307), and environmental assessment (Code308). Environmental information reporting in Thailand is a part of corporate sustainable development which aims to (1) reduce risk, and create an opportunity to earn income, (2) communicate enough corporate information to stakeholders, (3) balance between corporate economy, society, and environment, and (4) focus on environmental-in-process rather than environmental-after-process (SET, 2018).

To test the impact of environmental reporting on firm performance, most prior literature found a positive impact of environmental reporting on corporate performance (Almeyda & Darmansya, 2019; Gatimbu & Wabwire, 2016; Jagannathan et al., 2017; Purnomo & Widianingsih, 2012; Suttipun & Yordudom, 2022; Yoon et al., 2018; Zamil & Hassan, 2019). It is because the environmental reporting is used to mitigate and reduce conflicts of interest between shareholders and top-management as well as to close or decrease the problem of information asymmetry and agency cost in the corporations. Therefore, the reporting can lead the corporations to have better and higher performance. However, some research found a negative relationship between both variables (Kim et al., 2014; Stanwick & Stanwick, 2000). This is because environmental reporting and management can cost the corporations and reduce their performance. But, Hodkam (2016) found no influence of environmental reporting on corporate performance. Therefore, this study aims to test whether:

H1: There is a significant impact of environmental reporting on the corporate performance of listed companies from high environmental impact industries in Thailand.

3. RESEARCH METHODOLOGY

The population and sample used in this study are all 207 listed companies of the high environmental impact industries from the Stock Exchange of Thailand (SET) from 2016 to 2020 (SET, 2021), 2020 as the latest year in the period that the research had been conducted. The high environmental impact industries consist of agriculture and food, industrial, and resource industries. However, the study has excluded the firms that (1) are not in the SET during the period being studied (2016-2020), (2) do not have the end of accounting day on 31st December, (3) are not listed in high environmental impact industries, and (4) are not under rehabilitation or revocation (withdrawal). Therefore, the final samples are 163 firms which are 41 firms in the agriculture and food industry (25.15 percent), 73 firms in the industrial industry (44.79 percent), and 49 firms in the resource industry (30.06 percent). Thus, there are 815 firm-year observations.

Data collection is collected by using secondary data from corporate annual reports from 2016 to 2020, and the database of the SET Security Market Analysis and Reporting Tool (SETSMART). There are three main variables group in this study which are environmental reporting as the independent variable, firm performance as the dependent variable, and corporate characteristics as the control variable. Content analysis by word count is used to quantify the extent and level of environmental reporting in annual reports during the period being studied by using the guideline of the Global Reporting Initiative (GRI) standards in environmental perspective (GRI300). GRI standards were used by more than 10,000 firms around the world and remain the most widely used standard in sustainability reporting (GRI, 2020a). The researcher was counting the number of words in the annual report that related to the content of the GRI standards topic divided into eight categories consisting of material, energy, water, biodiversity, CO₂ emission, waste, environmental collaboration, and environmental assessment as shown in Appendix A. The return on asset (ROA) of the study year is proxied as firm performance in this study, while Tobin's Q is represented as an alternative firm performance variable in the sensitivity analysis model. Control variables consist of firm size, firm age, firm industry, risk, liquidity, ownership status, auditor type, and COVID period. All variables' proxies are chosen by the previous related studies (Almeyda & Darmansya, 2019; Suttipun & Yordudom, 2022) because they are in the same context for comparison. Table 1 indicates the variables' measurements used in this study.

Table 1: Variables' Measurement

Variables	Notation	Measurement
Environmental reporting	ENVI	Content analysis by word count
Firm performance	ROA	Return of asset (ROA) ratio ($(\text{EBIT} / \text{Average Total Assets}) \times 100$)
Firm size	SIZE	Natural logarithm of total asset

Table 1: Variables' Measurement (Cont.)

Variables	Notation	Measurement
Firm age	AGE	Year of firm age
Firm industry	INDUS	Dummy variables of agriculture and food industry, resource industry, and industrial industry
Risk	RISK	Debt ratio (Total Debt / Total Shareholders' Equity)
Liquidity	LIQUID	Current ratio (Current Assets / Current Liabilities)
Ownership status	FAMILY	Proportion of common share owned by the same family shareholders on total common share
Auditor type	AUDIT	Dummy variables of Big4 and Non-big4 auditors
COVID period	COVID	Dummy variables of before and during COVID

$$\text{Tobin's } Q = ((MP \times OSV) + MVpfs + MVI) / BVa$$

Where: MP = Market Price, OSV = Outstanding Share Volume, MVpfs = Market Value of Preferred Share, MVI = Market Value of Liabilities, BVa = Book Value of Assets (Disana, 2015).

To answer two main objectives of this study, descriptive analysis is used to the extent and level of environmental reporting of listed companies from high environmental impact industries in Thailand, while multiple regression analysis is used to examine the impact of environmental reporting on firm performance. In addition, correlation matrix is used to test for multicollinearity problems between variables used in this study. The main equation is indicated below:

$$\begin{aligned} \text{ROA} = & \beta_0 + \beta_1 \text{ENVI}_{i,t} + \beta_2 \text{SIZE}_{i,t} + \beta_3 \text{AGE}_{i,t} + \beta_4 \text{INDUS}_{i,t} + \beta_5 \text{RISK}_{i,t} + \beta_6 \text{LIQUID}_{i,t} + \beta_7 \text{FAMILY}_{i,t} \\ & + \beta_8 \text{AUDIT}_{i,t} + \beta_9 \text{COVID}_{i,t} + \varepsilon \end{aligned} \quad (\text{Main model})$$

Moreover, there is a sensitivity analysis model by using Tobin's Q (TOBIN) instead of ROA which the alternative equation is shown below:

$$\begin{aligned} \text{TOBIN} = & \beta_0 + \beta_1 \text{ENVI}_{i,t} + \beta_2 \text{SIZE}_{i,t} + \beta_3 \text{AGE}_{i,t} + \beta_4 \text{INDUS}_{i,t} + \beta_5 \text{RISK}_{i,t} + \beta_6 \text{LIQUID}_{i,t} + \beta_7 \text{FAMILY}_{i,t} \\ & + \beta_8 \text{AUDIT}_{i,t} + \beta_9 \text{COVID}_{i,t} + \varepsilon \end{aligned} \quad (\text{Sensitivity analysis model})$$

4. FINDINGS AND DISCUSSION

From 815 firms-year of observations, to answer the first objective, table 2 indicates the extent and level of environmental reporting on annual reporting from 2016 to 2020 of listed companies from high environmental impact industries in the SET. As the result, the average environmental reporting was 583.60 words (SD = 523.99) during the period being studied. Moreover, the most common reporting of Thai corporate environmental information was waste (Mean = 216.99 average words) followed by energy

***Impact of Environmental Reporting on Firm Performance of Listed Companies
from High Environmental Impact Industries in Thailand***

(Mean = 186.48 average words), CO₂ emission (Mean = 150.80 average words), biodiversity (Mean = 16.59 average words), water (Mean = 4.68 average words), material (Mean = 4.50 average words), environmental compliance (Mean = 3.17 average words), and environmental assessment (Mean = 0.38 average words).

Table 2: The Extent and Level of Environmental Reporting

Environment Reporting	Agriculture and Food Industry	Resource Industry	Industrial Industry	Total
Material				
Mean	10.40	0.00	3.46	4.50
SD	80.65	0.00	32.90	48.33
Max	722.00	0.00	371.00	722.00
Min	0.00	0.00	0.00	0.00
Energy				
Mean	221.46	234.09	137.06	186.48
SD	216.20	322.70	200.29	246.51
Max	1031.00	2014.00	1499.00	2014.00
Min	0.00	0.00	0.00	0.00
Water				
Mean	12.65	2.30	1.10	4.68
SD	74.95	18.29	14.98	42.37
Max	753.00	210.00	204.00	753.00
Min	0.00	0.00	0.00	0.00
Biodiversity				
Mean	18.24	2.22	23.92	16.59
SD	56.53	13.27	58.52	50.77
Max	296.00	103.00	355.00	355.00
Min	0.00	0.00	0.00	0.00
CO₂ Emission				
Mean	222.77	143.11	110.54	150.80
SD	239.49	241.63	172.35	217.17
Max	1684.00	1129.00	1175.00	1684.00
Min	0.00	0.00	0.00	0.00

Table 2: The Extent and Level of Environmental Reporting (Cont.)

Environment Reporting	Agriculture and Food Industry	Resource Industry	Industrial Industry	Total
Waste				
Mean	305.10	205.83	168.71	216.99
SD	311.79	291.18	234.13	278.88
Max	1573.00	1678.00	2371.00	2371.00
Min	0.00	0.00	0.00	0.00
Environmental Compliance				
Mean	4.61	0.00	4.12	3.17
SD	24.42	0.00	31.44	24.90
Max	217.00	0.00	335.00	335.00
Min	0.00	0.00	0.00	0.00
Environmental Assessment				
Mean	0.00	0.00	0.84	0.38
SD	0.00	0.00	0.48	6.24
Max	0.00	0.00	103.00	103.00
Min	0.00	0.00	0.00	0.00
Total				
Mean	795.23	587.55	449.75	583.60
SD	606.09	467.79	452.67	523.99
Max	2990.00	2155.00	3237.00	3237.00
Min	39.00	82.00	36.00	36.00

Table 2 When looking for insight into each high profile industry, the agriculture and food industry mostly reports about Waste, CO₂ Emission, and Energy, while the resource industry mostly reports about Energy, Waste, and CO₂ Emission. The industrial industry mostly reports on Waste, Energy, and CO₂ Emission.

Table 3 indicates the descriptive analysis of all variables used in this study. The mean of variables consists ROA is 5.69 percent, SIZE is 3.84 Natural logarithm of the total asset in million Baht, AGE is 32.92 years, RISK (Debt Ratio) is 1.50, LIQUID (Current Ratio) is 2.85, and FAMILY is 43.84 percent respectively.

Table 3: Descriptive Analysis of Variables Used

Variables	Mean	SD	Max	Min
ENVI	583.60	523.99	3237.00	36.00
ROA	5.69	8.56	56.01	-50.98
SIZE	3.84	0.70	6.35	1.10
AGE	32.92	16.07	107.00	1.00
INDUS	2.17	0.84	3.00	1.00
RISK	1.50	4.44	119.08	0.00
LIQUID	2.85	3.94	44.09	0.01
FAMILY	43.84	18.60	85.92	6.49
AUDIT	0.64	0.48	1.00	0.00
COVID	0.20	0.40	1.00	0.00

Table 4 shows the difference in environmental reporting between dummy variables used such as firm industry, auditor type, and COVID period. In the firm industry dummy variable, the industrial industry had the highest proportion at 45.40 percent, the agriculture and food industry at 26.38 percent, and the resource industry at 28.22 percent. Furthermore, in the auditor type dummy variable, there are more on the Big4 auditor at 64.42 percent whereas non-big4 auditor at 35.58 percent. Lastly, in the COVID period dummy variable, the samples are in COVID period at 20 percent. The testing of differences in firm industry, auditor type, and COVID period have been conducted by using the ANOVA and T-test. As a result, all interested groups have significantly different level of environmental reporting at 0.05 level. For example, the listed companies in the agriculture and food industry provided environmental reporting higher than companies in the resource industry and the industrial industry. The listed companies which have partnered with Big4 auditors provided higher environmental reporting than the other companies that use Non-big4 auditors to audit their financial statements. Finally, during COVID period, the listed companies in Thailand had more level of environmental reporting than pre-COVID period. Moreover, this research provides insight into the difference in the high environmental impact industries. Normally, the researcher may use the samples group that had shown the difference between high and low environmental impact industries (Suttipun & Yordudom, 2022). However, this research results show that there still has the difference in the high environmental impact groups.

Table 4: The Extent and Level of Environmental Reporting

Variables	N	Percent	Mean	F/t (sig.)
INDUS				
Agriculture and Food	230.00	28.22	795.23	33.28 (.000**)
Resource	215.00	26.38	587.55	
Industrial	370.00	45.40	449.75	
AUDIT				
Big4	525.00	64.40	623.43	2.933 (.002**)
Non-big4	290.00	35.60	511.49	
COVID				
Before	652.00	80.00	553.12	3.342 (.001**)
During	163.00	20.00	705.52	

** is significant at 0.01, and * is significant at 0.05.

Before testing for the impact of environmental reporting on firm performance, correlation matrix is used to test for multicollinearity problems between variables used in this study. Table 5, therefore, shows the correlation matrix. The correlation of all variables did not exceed 0.70 (Tabachnick & Fidell, 2007; Urdan, 2010) this means that no multicollinearity problem between variables used is apparent. Moreover, to test for correlations between one dependent variable, independent variable, and eight control variables, the finding indicates that ROA is negatively correlated to RISK at 0.01 level, while there is a positive correlation between ROA, SIZE, FAMILY, and AUDIT at 0.01 level. For the normal distribution, the sample in this study is 815 firm-year observations. Therefore, the distribution of the sample will be approximately normal and it will not cause problems when the sample size is more than 30 or 40 (Pallant, 2010).

Table 5: Correlation Matrix

Variable	ROA	ENVI	SIZE	AGE	INDUS	RISK	LIQUID	FAMILY	AUDIT
ROA	1	–	–	–	–	–	–	–	–
ENVI	–.057	1	–	–	–	–	–	–	–
SIZE	.124**	.253**	1	–	–	–	–	–	–
AGE	–.009	.113**	–.006	1	–	–	–	–	–
INDUS	–.037	.005	.437**	–.211**	1	–	–	–	–
RISK	–.197**	.141**	.299**	–.620**	.159**	1	–	–	–
LIQUID	.066	–.111**	–.235**	.002	–.109**	–.413**	1	–	–
FAMILY	.159**	.038	.058	–.030	–.223**	–.069*	.035	1	–
AUDIT	.132**	.102**	.318**	.018	.084*	.084*	–.078*	.235**	1
COVID	–.025	.116**	.003	.062	.000	.003	.036	.007	.019

** is significant at 0.01, and * is significant at 0.05.

Table 6 indicates the findings of multiple regression analysis from the main model and sensitivity analysis model. The R squared from the models is from 0.120 to 0.390, the adjusted R squared is from 0.109 to 0.384, and F-Value shows that the models explain approximately 9.959 to 47.451 percent of the variance in the data. To test the impact of environmental reporting on firm performance in corporate annual reports of listed companies in the SET, the findings of both models show that ROA is negatively influenced by ENVI at 0.01 level. Moreover, in terms of control variables, there is a positive relationship between SIZE, FAMILY, and ROA at 0.01 level in both models, while ROA is found to negatively influence on RISK at 0.01 and 0.05 levels. However, there is no relationship between AGE and ROA at 0.05 level in both models. Therefore, the hypothesis tested in this study is supported.

The result of the negative impact of environmental reporting on firm performance in this study is similar to the prior related studies of Kim et al. (2014), and Stanwick and Stanwick (2000). This is because environmental reporting and management can cost the corporations and reduce their performance. Moreover, the corporations may provide environmental information in terms of governance transparency mechanisms, in some cases, it may cause the concern about possible environmental risk impact on the investor resulted in the negative effect on the firm performance (Malarvizhi & Matta, 2016). However, the disclosure will benefit to the corporation another way. Additionally, the companies may provide more environmental information such as heavy investment and capital expenditure on the environmental activities or pollution prevention (Saleh, Zulkifli, & Muhamad, 2011). On the other reasonable explanation, the firm reporting environmental information incurs high costs and expenses because the reporting is expended to be embedded in the process of corporate operation and management. Thus, environmental

reporting has a negative impact on firm performance. The firms used in this study are listed companies in Thailand, where is an emerging economic country, that firms' size is smaller than listed companies in developed countries, therefore, it appears to be too costly and do not seem to be reasonable investment for smaller firms (Gargouri, Shabou, & Francoeur, 2010). For example, (Litt, Sharma, & Sharma, 2014) found that environmental reporting will benefit the firms in the more developed market, but the result may be the opposite in emerging economic markets.

Furthermore, the control factor of ownership status or FAMILY has the positive relationship with ROA and TOBIN. This study is supported by the prior studies such as the study of Chu (2011) found that the family ownership leads to better firm performance in Taiwan. This may be because family exerts power over the organization's strategy and the interest between owners and managers are aligned and be able to create value for firms (Chu, 2011). However, the results differ from the study of Al Farooque, Buachoom, and Sun (2020) that investigate the effects of ownership structures on the financial performance of companies listed in Thailand as in the emerging market context.

In another word, the results of this study indicate that the more environmental reporting, the smaller companies' size and the less family ownership will affect to poor financial performance (ROA and Tobin's Q). The environmental reporting is one of the corporate governance tools used to provide the information to stakeholders. As a result, this provides some evidence of the appropriate set of governance mechanisms existed in Thai-listed firms (Al Farooque et al., 2020)

Table 6: Multiple Regression Analysis

Variables	Main Model		Sensitivity Analysis Model	
	B	t (sig.)	B	t (sig.)
Constant	-2.889	-1.462	-3.909	-7.932**
ENVI	-0.002	-2.713**	-10.230	-2.578**
SIZE	2.827	5.526**	10.941	9.388**
AGE	-0.019	-1.043	0.025	0.993
RISK	-6.529	-5.873**	-2.323	-1.895*
LIQUID	0.006	0.081	2.767	3.138**
FAMILY	0.039	2.336**	0.039	2.174*
AUDIT	1.064	1.605	4.314	5.956**
COVID	-0.422	-0.590	-0.650	-0.824
INDUS	Included		Included	

Table 6: Multiple Regression Analysis (Cont.)

Variables	Main Model		Sensitivity Analysis Model	
	B	t (sig.)	B	t (sig.)
R Square	0.120		0.390	
Adj. R Square	0.109		0.384	
F-vale (sig.)	9.959**		47.451**	
Max VIF	1.614		1.299	
N	815		815	

** is significant at 0.01, and * is significant at 0.05.

5. SUMMARY AND SUGGESTIONS FOR FUTURE STUDY

To answer two main research questions (1) what is the extent and level of environmental reporting on corporate annual reports from 2016 to 2020 of listed companies from high environmental impact industries, and (2) is there the impact of environmental reporting on firm performance, this study finds that the average environmental reporting was 583.60 words during the period being study. Furthermore, the difference in environmental reporting within the high environmental impact industries (agriculture and food industry, resource industry, and industrial industry) has been found. Also, during COVID period in 2020, the listed companies in Thailand had reported environmental reporting more than in the 2016–2019 or pre-COVID period. Moreover, the most common reporting of corporate environmental information GRI topic is the waste followed by energy, CO₂ emission, biodiversity, water, material, environmental compliance, and environmental assessment. In terms of the relationship between variables, there is a negative impact of environmental reporting on firm performance in Thailand. Firm size, risk, and ownership status also have correlated with firm performance. The environmental reporting and owner management may cost the corporations such as investing or spending in the environmental activities for the long team performance which affects the negative or reduces their current performance.

Contributions and implications of this study are stated by the study's findings. In terms of theoretical contributions, firstly, the stewardship theory can explain the negative impact of environmental reporting on the corporate performance of listed companies in Thailand. The theory indicated that Thai firms may use environmental reporting to contribute the positive image to their stakeholders, therefore, it can cost the firms that reduce their performance. Second, after the regulation of non-financial information reporting in Thailand since 2015, this study is the first study which investigates and tests the extent and level of environmental reporting as well as the impact of the reporting on firm performance. Finally, this study's findings can shed light of the development of non-financial information disclosure during the COVID period in emerging economic countries, especially in Thailand.

In terms of practical contributions and implications, the study's results demonstrate environmental reporting guidelines of the regulators and policymakers providing different levels of environmental reporting even in different high profile industries. However, the most common topics are the waste followed by energy, and CO₂ emission which are also listed in the ESG guideline of the Stock Exchange of Thailand (SET, 2019). Therefore, these three main topics are in the spotlight. Moreover, the study's findings may guide and point out that Thai listed companies have to balance between financial and non-financial information disclosures for their sustainability.

There are some limitations that have to be mentioned. First, the study collected only the extent and level of environmental reporting, but the tone of environmental reporting is not included. This may be linked to the negative impact of environmental reporting on corporate performance in this finding because the reporting is now under the regulation of the SET, and the tone of reporting is about bad news. Second, although there are eight industries in Thailand consisting of agriculture and food, consumer product, finance and insurance, industrial, property and construction, resource, service, and technology, this study picked up only three industries out of eight. Thus, the result may be different, if all industries in the SET are used. Third, in Thailand, there are two market capitals which are the SET and the Market for Alternative Investment (MAI), but the SET was only the market where is selected by this study. Fourth, the dependent variable of firm performance used ROA of the study year, however, this study is not considering lagging year. Finally, this study aims to investigate the impact of environmental reporting on firm performance with the multiple regression statistic model which has some statistical limitations, However, the multiple regression can explain the decency relationship between variables. Therefore, to suggest for future study, the tone of environmental reporting of listed companies in all industries will be investigated including the comparison between the main capital market and alternative capital market in Thailand. Furthermore, the research may have to be considered about the firm performance lagging year for long term investment corporate performance in relation to the stewardship theory. Moreover, for better statistical analysis, the use of Structural Equation Modeling (SEM) techniques may have to be considered (Gefen, Straub, & Boudreau, 2000).

REFERENCES

- Al Farooque, O., Buachoom, W., & Sun, L. (2020). Board, audit committee, ownership and financial performance – emerging trends from Thailand. *Pacific Accounting Review*, 32(1), 54–81. doi:10.1108/ PAR-10-2018-0079
- Almeyda, R., & Darmansya, A. (2019). The influence of environmental, social, and governance (ESG) disclosure on firm financial performance. *IPTEK Journal of Proceedings Series*, (5), 278–290.
- Atkins, B. (2006, 28 November). Is corporate social responsibility responsible?. *Forbes*. Retrieved from https://www.forbes.com/2006/11/16/leadership-philanthropy-charity-lead-citizen-cx_ba_1128directorship.html?sh=12a6fb984a07
- Chu, W. (2011). Family ownership and firm performance: Influence of family management, family control, and firm size. *Asia Pacific Journal of Management*, 28(4), 833–851. doi:10.1007/s10490-009-9180-1
- Disana, S. (2015). *Effect of Enviornmental Disclosure and Internal Control on Firm Value: A Case Study of Listed Companies in the Stock Exchange of Thailand (SET)*. (Master of Accountancy). Prince of Songkla University,
- Donaldson, T., & Preston, L. E. (1995). The stakeholder theory of the corporation: Concepts, evidence, and implications. *Academy of Management Review*, 20(1), 65–91.
- Elkington, J. (1998). Partnerships from cannibals with forks: The triple bottom line of 21st-century business. *Environmental Quality Management*, 8(1), 37–51.
- Gargouri, R. M., Shabou, R., & Francoeur, C. (2010). The relationship between corporate social performance and earnings management. *Canadian Journal of Administrative Sciences/Revue Canadienne Des Sciences De l'Administration*, 27(4), 320–334.
- Gatimbu, K. K., & Wabwire, J. M. (2016). Effect of Corporate Environmental Disclosure on Financial Performance of Firms Listed at Nairobi Securities Exchange, Kenya. *International Journal of Sustainability Management and Information Technologies*, 2(1), 1–6.
- Gefen, D., Straub, D., & Boudreau, M.-C. (2000). Structural equation modeling and regression: Guidelines for research practice. *Communications of the association for information systems*, 4(1), 7.
- GRI. (2020a). About GRI. Retrieved from <https://www.globalreporting.org/about-gri/>
- GRI. (2020b). GRI Standards. Retrieved from <https://www.globalreporting.org/how-to-use-the-gri-standards/gri-standards-english-language/>
- Haniffa, R. M., & Cooke, T. E. (2002). Culture, Corporate Governance and Disclosure in Malaysian Corporations. *Abacus*, 38(3), 317–349. doi:10.1111/1467-6281.00112

- Hodkam, S. (2016). *The Study of Relationship between the Level of Sustainability Report Disclosure and Security Prices of Listed Companies in the Stock Exchange of Thailand*. (Master's Thesis). Burapha University, Saen Suk, Thailand,
- Jagannathan, R., Liberti, J., Liu, B., & Meier, I. (2017). A Firm's Cost of Capital. *Annual Review of Financial Economics*, 9(1), 259-282. doi:10.1146/annurev-financial-110716-032429
- Jensen, M. C., & Meckling, W. H. (2019). Theory of the firm: Managerial behavior, agency costs and ownership structure. In *Corporate Governance* (pp. 77–132): Gower.
- Kim, Y., Li, H., & Li, S. (2014). Corporate social responsibility and stock price crash risk. *Journal of Banking & Finance*, 43, 1–13.
- Kim, Y., Park, M. S., & Wier, B. (2012). Is earnings quality associated with corporate social responsibility? *The Accounting Review*, 87(3), 761–796.
- Le, T. (2020). The effect of green supply chain management practices on sustainability performance in Vietnamese construction materials manufacturing enterprises. *Uncertain Supply Chain Management*, 8(1), 43–54.
- Litt, B., Sharma, D., & Sharma, V. (2014). Environmental initiatives and earnings management. *Managerial Auditing Journal*, 29(1), 76–106.
- Lubis, H., Pratama, K., Pratama, I., & Pratami, A. (2019). A systematic review of corporate social responsibility disclosure. *International Journal of Innovation, Creativity and Change Vol*, 6(9), 415, 428.
- Mahadeo, J. D., Oogarah-hanuman, V., & Soobaroyen, T. (2011). A Longitudinal Study of Corporate Social Disclosures in a Developing Economy. *Journal of Business Ethics*, 104, 545–558. doi:10.1007/s10551-011-0929-3
- Malarvizhi, P., & Matta, R. (2016). “Link between Corporate Environmental Disclosure and Firm Performance”–Perception or Reality? *The British Accounting Review*, 36(1), 107–117.
- Mel , D. (2008). *Corporate social responsibility theories* (Vol. 47). New York: Oxford University Press.
- Ministry of Industry. (2017). *Green Industry* (8th ed.). Bangkok, Thailand: Department of industry works.
- Mohmed, A., Flynn, A., & Grey, C. (2019). The link between CSR and earnings quality: evidence from Egypt. *Journal of Accounting in Emerging Economies*, 10(1), 1–20.
- Noranarttakun, P., & Pharino, C. (2021). Strategic Implementation to Enhance Green Industry Practices in SMEs: Lesson Learned from Thailand. *EnvironmentAsia*, 14(1).
- Odat, M. A., Al Daoud, K. A., & Zurigat, Z. M. (2021). Corporate governance and the cost of equity: Evidence from the developing country. *Journal of Governance & Regulation*, 10(4), 144–155. doi:https://doi.org/10.22495/jgrv10i4art13

Impact of Environmental Reporting on Firm Performance of Listed Companies

from High Environmental Impact Industries in Thailand

- Pallant, J. (2010). *SPSS Survival Manual: A Step by Step Guide to Data Analysis Using SPSS* (4th ed.). Berkshire, UK: McGraw-Hill Education.
- Purnomo, P. K., & Widianingsih, L. P. (2012). The influence of environmental performance on financial performance with corporate social responsibility (CSR) disclosure as a moderating variable: evidence from listed companies in Indonesia. *Review of Integrative Business and Economics Research*, 1(1), 57–69.
- Rezaee, Z., Alipour, M., Faraji, O., Ghanbari, M., & Jamshidinavid, B. (2021). Environmental disclosure quality and risk: the moderating effect of corporate governance. *Sustainability Accounting, Management and Policy Journal*, 12(4), 733–766. doi:10.1108/SAMPJ-10-2018-0269
- Saleh, M., Zulkifli, N., & Muhamad, R. (2011). Looking for evidence of the relationship between corporate social responsibility and corporate financial performance in an emerging market. *Asia-Pacific Journal of Business Administration*, 3(2), 165–190.
- Schillemans, T., & Bjurström, K. H. (2020). Trust and verification: Balancing agency and stewardship theory in the governance of agencies. *International Public Management Journal*, 23(5), 650–676.
- SET. (2018). Sustainable Capital Market Development. Retrieved from <https://www.setsustainability.com/>
- SET. (2019). ESG Disclosure. Retrieved from <http://www.setsustainability.com>.
- SET. (2021). Company Listed in the Stock Exchange of Thailand. Retrieved from <http://www.set.or.th>
- Stanwick, S. D., & Stanwick, P. A. (2000). The relationship between environmental disclosures and financial performance: an empirical study of US firms. *Eco-Management and Auditing*, 7(4), 155–164. doi:[https://doi.org/10.1002/1099-0925\(200012\)7:4<155::AID-EMA137>3.0.CO;2-6](https://doi.org/10.1002/1099-0925(200012)7:4<155::AID-EMA137>3.0.CO;2-6)
- Suttipun, M., & Stanton, P. (2011). *Determinates of Environmental Reporting in Corporate Annual Reports of the Stock Exchange of Thailand (SET)*. Paper presented at the Society of Interdisciplinary Business Research (SIBR) 2011 Conference on Interdisciplinary Business Research, Bangkok, Thailand. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1867823
- Suttipun, M., & Stanton, P. (2012a). Making or Not Making Environmental Disclosures in Thailand. *International Journal of Business and Social Science*, 3(9), 73–81.
- Suttipun, M., & Stanton, P. (2012b). A study of environmental disclosures by Thai listed companies on websites. *Procedia Economics and Finance*, 2, 9–15.
- Suttipun, M., & Yordudom, T. (2022). Impact of environmental, social and governance disclosures on market reaction: an evidence of Top50 companies listed from Thailand. *Journal of Financial Reporting and Accounting*, 20(3/4), 753–767. doi:10.1108/JFRA-12-2020-0377
- Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics* (5th ed.). Boston: Pearson/Allyn & Bacon.

- Thuy, H. X., Khuong, N. V., Anh, L. H. T., & Quyen, P. N. (2022). Effect of corporate governance on corporate social responsibility in Vietnam: state-ownership as the moderating role. *Journal of Financial Reporting and Accounting*, ahead-of-print(ahead-of-print). doi:10.1108/JFRA-10-2021-0367
- UN. (2021). United Nations Climate Change: The Paris Agreement. Retrieved from <https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement>
- UNTC. (2021). United Nations Treaty Collection. Retrieved from https://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtdsg_no=XXVII-7-d&chapter=27&clang=_en
- Urdan, T. C. (2010). *Statistics in plain English* (3rd ed.). New York: Routledge.
- Wichianrak, J., Wong, K., Khan, T., Siriwardhane, P., & Dellaportas, S. (2021). Soft law, institutional signalling-Thai corporate environmental disclosures. *Social Responsibility Journal*, 18(2), 205–220.
- Wuttichindanon, S. (2017). Corporate social responsibility disclosure—choices of report and its determinants: Empirical evidence from firms listed on the Stock Exchange of Thailand. *Kasetsart Journal of Social Sciences*, 38(2), 156–162.
- Yoon, B., Lee, J. H., & Byun, R. (2018). Does ESG Performance Enhance Firm Value? Evidence from Korea. *Sustainability*, 10(10), 3635–3652.
- Zamil, G. S., & Hassan, Z. (2019). Impact of environmental reporting on financial performance: Study of global Fortune 500 companies. *Indonesian Journal of Sustainability Accounting and Management*, 3(2), 109–118.

Appendix A:

GRI Standards 300 Environmental dimension (GRI, 2020b)

GRI 301: Materials

Consists Materials used by weight or volume, Recycled input materials used, Reclaimed products and their packaging materials

GRI 302: Energy

Consists Energy consumption within the organization, Energy consumption outside of the Organization, Energy intensity, Reduction of energy consumption, Reductions in energy requirements of products and services

GRI 303: Water and Effluents

Consists Interactions with water as a shared resource, Management of water discharge-related Impacts, Water withdrawal, Water discharge, Water consumption

GRI 304: Biodiversity

Consists Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas, Significant impacts of activities, products and services on biodiversity, Habitats protected or restored, IUCN Red List species and national conservation list species with habitats in areas affected by operations

GRI 305: Emission

Consists Direct (Scope 1) GHG emissions, Energy indirect (Scope 2) GHG emissions, Other indirect (Scope 3) GHG emissions, GHG emissions intensity, Reduction of GHG emissions, Emissions of ozone-depleting substances (ODS), Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions

GRI 306: Effluents and Waste

Consists Water discharge by quality and destination, Waste by type and disposal method, Significant spills, Transport of hazardous waste, Water bodies affected by water discharges and/or runoff

GRI 307: Environmental Compliance

Consists Non-compliance with environmental laws and regulations

GRI 308: Supplier Environmental Assessment

Consists New suppliers that were screened using environmental criteria, Negative environmental impacts in the supply chain and actions taken