

# Causality Analysis Between Environmental, Social, and Governance (ESG) Performance and Financing Support: Case Study Mining Company in Indonesia

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## **Abstract**

*Recent global trends in electric vehicles (EV) triggered Indonesia to participate in battery industry development. Rich in geological resources, the government promotes various capital-intensive industries that process raw mining commodities, particularly limonite nickel ore, to support the EV industry in Indonesia. Inarguably, financial support is needed from various financial institutions and investors. On the contrary, the mining industry is closely related to environmental issues that attract the attention of financial institutions and investors. Therefore, understanding the relationship between “sustainability” and “financing activity” is essential, as it may not only practically guide the business to re-examine their environmental, social, and governance (ESG) initiatives but also extend the literature review on these matters. Therefore, this paper aims to describe the system through the Causal Loop Diagram (CLD) formed by ESG factors related to the financing process in mining companies in Indonesia. The research method used in this paper is developing causal loop diagrams from primary data and literature reviews. The CLD is constructed through a literature review and confirmed by an expert from the mining company. The result explains the causal loop between sustainability and financing. Improving ESG performance will increase financial support from global investors and financial institutions. To support practice and concept sustainability in Indonesia, the government should encourage mining companies to increase local partnerships and CSR Allocation as it will support the company's financing activity and trigger community improvement. Creating a supporting environment to attract global investors to finance the mining company in Indonesia is also necessary.*

**Keywords:** Causal Loop Diagram, ESG Performance, Financial Performance, Mining Industry, Sustainability

**JEL :** M14, Q01, G32

## **A. INTRODUCTION**

Considering its business process, the mining industry sector has been categorized as a high-impact environment, social, and government (ESG) sector. Rahm (2013) has compiled the impacts of several mining operations, such as precious metals, base metals, bulk metals, and aluminium operations and identified common impacts from these mining operations, such as air pollution, acid mine drainage, deforestation, and safety issues. These issues have recently been

growing and escalating to global investors, especially responsible investors, as they are concerned about how their investments (companies) have the capacity and commitment to better address sustainability issues.

The notion that "sustainability issues can be financially material" has gained general acceptance among investors, companies, and regulators (Rogers and Serafeim, 2019). Some research also presents similar notions (Raimo et al., 2021; Nirino et al., 2021; Bogers et al., 2020).

Therefore, business organizations or companies gradually align their position with stakeholders' aspirations of becoming sustainable companies. Sustainability covers environmental, social, and governance aspects, commonly known as "ESG."

Companies are concerned about how "to deliver" the initiatives and how to "disclose" their activities to their stakeholders. Thus, reporting must disclose how companies deliver their initiatives toward ESG aspects. Recently, it has been widespread that ESG initiatives will be summarized by companies within a report (Sustainability Report) that is published regularly at least once a year. The sustainability report holds a critical role, as a stand-alone financial report cannot give non-financial information to stakeholders as such information is needed (Raimo et al., 2020; Vitolla et al., 2019; Wulf et al., 2014).

At least two ground theories are related to ESG Reporting (Sustainability Report): legitimacy theory and stakeholder theory (Lokuwaduge and Heenetigala, 2016). These theories have been constructed over the years and support developing a Sustainability Report to disclose corporate activities toward their ESG aspects. Undoubtedly, the information presented by this report is needed by global financial institutions, as one of the stakeholders, to determine their participation in finance projects.

Recently, in Indonesia, as encouraged by the government, mining companies have started mega projects to optimize their current business or expand the business by initiating downstream projects. The global trends in electric vehicles (EVs) pull the trigger for Indonesia to participate in developing the battery industry in Indonesia. The government then promotes various capital-intensive industries in the mining sector, particularly in nickel ore processing, to support the development of the EV industry in Indonesia. Later, in 2022, the Coordinating Minister for Economic Affairs of the Republic of Indonesia published a regulation regarding the list of National Strategic Projects. The regulation

consisted of at least eight downstream programs of nickel smelter construction that are owned by PT Artabumi Sentra Industri (1 program), PT Wanxiang Nickel Indonesia (1 program), PT Artha Mining Industry (1 program), PT Ceria Nugraha Indotama (1 program), PT Macika Mineral Industri (1 program), PT Virtue Dragon Nickel Industry (1 program), PT Aneka Tambang (2 programs). Those mining companies respond positively to the government's support, as it supports their downstream projects.

Inarguably, financial support is needed from various financial institutions and investors. It is drawing attention that the capital structures to finance the projects are highly dependent on debt (Gomez et al., 2015), meaning that mining companies in Indonesia need financial institutions to support the projects. On the contrary, the mining industry is closely related to environmental issues that attract the attention of financial institutions and investors.

Therefore, understanding the linkage between "sustainability" and "financing activity" is essential, as it may not only practically guide the business to re-examine their ESG initiatives (Velte, 2017) but also extend the literature review of these matters. Therefore, the purpose of this research is to describe the system constructed by ESG factors related to the financing process of mining companies in Indonesia through a causal loop diagram.

The rest of the paper is as follows: the "Literature Review" section introduces the definition of sustainability and provides an overview of prior research. Next, "Data and Methodology" describes the systematic framework and data collection. The findings are discussed in the "Analysis" section. The final section presents concluding remarks and insights from a broader perspective, particularly from the policy-makers' perspective.

## **B. LITERATURE REVIEW**

This part will summarise previous research, particularly regarding the relationship between

ESG performance and financing companies, in the first part of previous research regarding the relationship between ESG performance and financial reports. This paper will identify the relationship between ESG performance and the condition in a holistic system.

### ***Stakeholder Theory and Legitimacy Theory***

Stakeholder theory identifies the interests of different stakeholders with which the company, through a network of various joint ventures, will ultimately determine the success of products and services (Freeman, 1984); moreover, Clarkson et al. (2008) claim that stakeholders are interested in sustainable strategies of the company, better ESG reporting will lead to better CSR performance measures, like CSR ratings or reputational aspects in stakeholder theory, ESG performance shows a positive correlation with the financial statement because there is an interest inside the coalition partner that impacts to the product and services change according to the demand of ESG performance (Wu, 2006; Beurden and Goessling, 2008; Margolis and Walsh, 2003).

Legitimacy theory also identifies how the company would voluntarily report on activities as a communication tool, such as disclosing ESG information. The firm that discloses its sustainability practices establishes information products and services that benefit stakeholder groups, thereby achieving legitimate social status (Rahman and Alsayegh, 2021). In the finding legitimacy theory, the firm that discloses stronger ESG Performance has a lower cost of debt and an equal impact on the cost of debt as ESG Performance. The market can engender more desirable social outcomes by rewarding ESG performance (Eliwa et al., 2019)

Concerning previous studies, Corporate Social Performance and ESG performance have a positive correlation between Corporate Financial Performance and credit rating. This condition illustrates that the role of ESG Performance is that the company's finances and credit rating are positively correlated and become the basis for

companies to get financial support for those who apply ESG better. However, previous studies have not focused on what types of financing opportunities each ESG factor provides. This study fills the void of previous research on financial support opportunities obtained from the ESG Factor. Several external stakeholders can play a role in increasing the ESG factor for the company described in this study, so the positive relationship between the ESG factor and financial support will be more apparent than the stakeholder role.

### ***Implication ESG performance for financial report***

Edward Freeman, in 1984, established the development of a sustainability report. Several previous studies explain the relationship between ESG performance and financial performance, stating that shareholders are not the only important entity but also employees, communities, and citizens (Velte, 2017). A financial statement can present the financial performance and show significant relation (Margolis and Wals, 2003; Orlitzky et al., 2003). In contrast, there is a positive relation between ESG performance and financial performance with stakeholder theory (Godfrey et al., 2009; Barnett and Salomon, 2006).

### ***Relation of Financial Performance and ESG Performance***

Preston and O'Bannon (1997) distinguish between the direction of the relationship – positive, negative, or neutral – and the causal sequence – whether one type of performance follows another or whether they are synergistic. They finally arrive at six possible causal and directional hypotheses – social impact, available funding, trade-off, managerial opportunism, and synergistic hypotheses. Cooper and Uzur (2015) claim that there is a negative correlation between ESG commitment and the cost of debt. In contrast, Hoepner et al. (2016) claim a positive correlation between national sustainability and cooperation conditions.

### **ESG Performance and Financing Support**

Some research identifies the relationship between ESG performance and Financing Support (Pavelin and Oikonomou, 2017; Cooper and Uzur, 2015; Ge and Lui, 2015; Goss and Robert, 2011; Attig et al., 2013). Payelin and Oikonomo (2017) claim that social performance increases credit quality and decreases the cost of debt financing. Hence, the company has a vast opportunity for credit support from a financial institution. Cooper and Uzur (2015) have the same point that Corporate Social Responsibility (CSR) has a positive correlation with the low cost of debt; hence, the company can obtain financial support, including financing support from the bond, which is the company has a lower cost of bond (Ge and Liu, 2015). Gross and Robert (2011) claim that

from the bank's point of view, the lower cost can be explained by the company that can conduct good CSR. In contrast, CSR and social programs affect the company to maintain the loan risk and higher credit rating (Attig et al., 2013).

A company with much commitment to the ESG and CSR program tends to have a higher company bond owned by the public due to the higher credit rating. Not only from the company level but also at the country level, the country with better sustainability tends to have a lower bank loan cost than the country with the worst sustainability characteristic (Hoepner et al., 2016). Zeidan et al. (2015) add that a country that implements consistent developing sustainability will have a lower default expectation compared to an inconsistent sustainability country.

**Table 1.** Previous Research About Relation ESG Performance and Financing Support

No	Title	Author	Finding
1	The effects of corporate social performance on the cost of corporate debt and credit ratings	Pavelin and Oikonomou, 2017	How social performance impacts on the cost of debt financing and the credit quality
2	The effects of corporate and country sustainability characteristics on the cost of debt: An international investigation	Hoepner et al., 2016	A country with high sustainability associated with low cost of bank loans
3	Do banks value the eco-friendliness of firms in their corporate lending decision? Some empirical evidence	Nandy and Lodh, 2012	Lower cost for loan negotiation
4	Corporate social responsibility and the cost of corporate bonds	Ge and Lui, 2015	Lower cost for a bond issue
5	Corporate social responsibility and the cost of debt	Cooper and Uzur, 2015	CSR makes the cost of debt
6	The impact of corporate social responsibility on the cost of bank loans	Goss and Roberts, 2011	CSR lowers the cost of bank loans
7	Developing a sustainability credit score system	Zeidan et al., 2015	Lower default probability expected
8	Unlocking Capital, activating a movement: final report of the strategic assessment of the Rockefeller foundation's impact investing initiative	Jackson and Harji, 2012	Investments with a positive social and environmental impact with financial leaders
9	Corporate social responsibility and credit ratings	Attig et al., 2013	CSR and socially responsible initiatives on the credit risk portfolio of banks
10	Reasons for implementing certified quality systems and impact on performance: An analysis of the hotel industry	Alonso-Almeida et al., 2012	A Positive Relationship Between Social Responsibility and Financial Performance

No	Title	Author	Finding
11	Corporate social responsibility: Does the corporate bond market reward it? A critical note	Menz, 2010	Companies with higher ESG-CSR commitment face higher corporate bond spreads and, hence, higher credit ratings.

### C. RESEARCH METHODS

#### Data

This paper utilizes secondary data to identify the main problem of this research. The secondary data refers to previous research on ESG Performance and Financing Support. The secondary data is also used to develop a base model of CLD. Then, the primary data is obtained through the interview with related stakeholders, which confirms the model of CLDs developed before the interview session. The interviewee is an expert in sustainability issues who currently works in the Mining Industry in Indonesia (MIND ID) with more than fifteen years of experience in corporate responsibility, sustainable development, and social performance from various industry sectors. MIND ID is Indonesia's mining industry holding company comprising PT Aneka Tambang Tbk, PT Bukit Asam Tbk, PT Freeport Indonesia, PT Indonesia Asahan Alumunium, and PT Timah Tbk.

#### Methodology

The methodology of this paper is as follows:

1. Literature review. We conduct the literature review as a preliminary study to capture the framework and relation between variables and identify the stakeholders involved in this analysis.
2. Constructing the causal loop diagram from the literature review. We construct the causality from several research papers as based construction and analyze the researcher to explain the selected variable that refers to previous research.
3. Constructing the basic causal loop diagram. We construct a simple causality model to explain the fundamental relation between variables inside the system.

4. Detailed explanation from Simplified and Complex Causal Loop Diagram. This causal loop diagram is constructed by reconfirming the interviewee from the mining company mentioned above on data and combining data from the causal loop literature review. This paper will scrutinize causal loop diagrams into 4 (four) main loops: environmental, performance, social performance, governance performance, and financial support.

#### Causal Loop Diagram

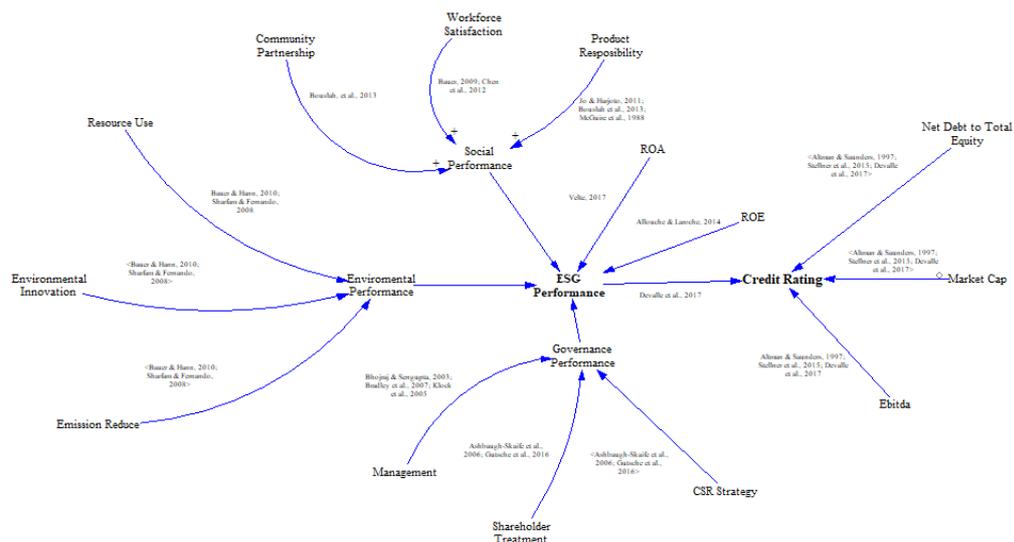
Halardsson (2004) asserts that system analysis is about discovering organizational structures in systems and creating insights into the organization of causalities. It is about separating and reassembling the problem to understand its components and feedback relationship.

System analysis involves group modelling, where we ask the initial question of the problem and create a mental model structure using Causal Loop Diagrams to reflect that problem.

According to Kiani et al. (2009), the Causal Loop Diagram aims to structure the aggregate form of presentation and illustrate the causal relationship. A causal diagram consists of variables connected by arrows illustrating the causal relation between variables. The Causal Loop Diagram is helpful for as follows:

- Capturing the hypothesis faster
- Obtaining and capturing the mental model from individuals or teams
- Communicating the researcher's significant point of view

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Source : Source: Several Sources

**Figure 1.** Causal Loop Diagram from Previous Literature

### D. RESULT AND DISCUSSION

#### 1. Literature Review's Causal Loop Diagram

Inside the Causal Loop Diagram (CLD), several previous types of research can be identified, such as ESG performance and Credit Rating. The utilization of credit variables can be described as the soundness condition of credit rating. The causal loop system describes the role of every variable on ESG performance that positively impacts credit rating. The variable is as follows:

a) ESG Performance → Credit Rating

ESG Performance is related to Credit Rating because several companies analyzed show a positive relationship between ESG performance and credit rating rating. (Devalle et al., 2017; Attig et al, 2013; Menz, 2010).

b) Product Responsibility, Workforce Satisfaction, and Community Partnership → Social Performance.

Product responsibility gives consumers the confidence to buy their products to increase social performance (Jo and Harjoto, 2011; Bouslah et al., 2013; McGuire et al., 1988). In addition, providing Workforce Satisfaction will affect the company's relationship with the social

conditions of employees and the surrounding community more harmoniously, and this can also improve social performance (Bauer, 2009; Chen et al., 2007). Community and community involvement in the company's business processes will also increase the company's sustainability in the operation of a business (Bouslah et al., 2013).

c) Resource Use, Environmental Innovation, and Emission Reduce → Environmental Performance

Resource use is one of the essential factors in maintaining environmental quality in running business processes. The more eco-efficient, the better the supply chain in the company (Bauer and Hann, 2010; Sharfam and Fernando, 2008). Including innovation in using various environmental resources and appropriate technology to increase innovation is vital for environmental performance (Bauer and Hann, 2010; Sharfam and Fernando, 2008). Futures emission reduction is crucial to protecting the

environment from industrial damage (Bauer and Hann, 2010; Sharfam and Fernando, 2008).

d) CSR Strategy, Shareholder Treatment, and Management → Governance Performance

In determining CSR, the strategy determines corporate governance in managing business processes (Ashbaugh-Skaife et al., 2006; Gutsche et al., 2016). The role of shareholders whose adequate supervision and indirect take-over of business processes can create better governance for the company (Ashbaugh-Skaife et al., 2006; Gutsche et al., 2016). Management companies that emphasize basic principles in company management will be better in governance (Bhojraj and Sengupta, 2003; Bradley et al., 2007; Klock et al., 2005).

e) ROA → ESG Performance

This ROA contributes to an increase in ESG performance. This is because a faster increase in assets will make it easier for companies to improve the sustainability of their business processes (Velte, 2017; Alonso-Almeida et al., 2012; Jackson and Harji, 2012).

f) ROE → ESG Performance

Significant increase in equity positively affects ESG performance and increases sustainability (Allouche and Laroche, Godfrey et al., 2009; Barnett and Salomon, 2006; Jackson and Harji, 2012)

g) Net Debt to Total Equity, Market Cap, and Ebitda → Credit Rating

Several variables directly control Credit Rating; the higher the company's financial leverage, the higher the risk of default set by the rating agency. In addition, higher profitability (EBIT/total earnings) can positively impact credit ratings due to reduced risk (Altman and Saunders, 1997; Stellner et al., 2015; Devalle et al., 2017).

## 2. Basic Causal Loop Diagram

This paper will identify the relationship between ESG performance and financing support. ESG performance will explain the sustainable business process, including its

influences on the environment from the upstream mining industry.

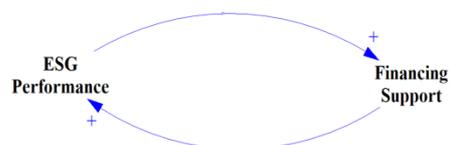


Figure 2. Basic Loop

The social component explains the social contribution, which can affect the direct benefit of business. Moreover, governance in the mining industry can mitigate fraud risks inside companies.

Acceleration of ESG performance will promote financial support from several financial institutions. Financing support can promote better ESG performance. Financing support in this paper will focus on the institution or intermediation that focuses on ESG performance. This condition can be described in Figure 2. The figure explains the reinforcing condition. ESG performance has a positive causality with financing support and vice versa, and financing support has a positive causality with ESG performance.

## 3. Causal Loop Diagram Analysis for ESG Performance and Financing Support

This system is developed from the primary loop from Figure 2, which explains two central systems: financing Support and ESG Performance. After the primary loop is developed, this system will explain more details representing the reality variable connection.

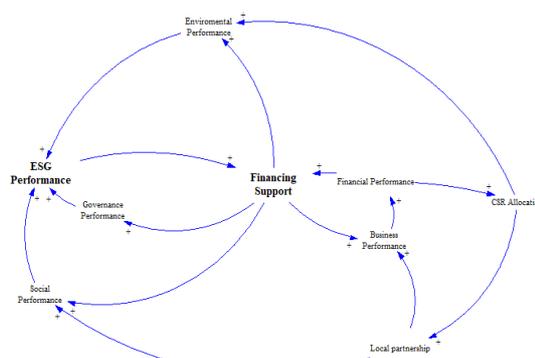


Figure 3. Simplified System

We scrutinize ESG performance regarding environmental, social, and government performance. Financial Support has a variable that has a connection with financial performance and business performance that is explained as follows:

a) Governance Performance → ESG Performance → Financial Support → Governance Performance

The role of good governance can upgrade ESG-level performance. The increase in ESG performance will increase the financial support of mining companies because it can build the trust of lenders or investors. Financial support can increase the quality of good governance of the company and can be reinforced.

b) Social Performance → ESG Performance → Financial Support → Social Performance

Social performance and company activities include the company activities that can gather the external stakeholders in the business process. The role of social performance can accelerate ESG performance, and the company, lender, and investor can prevent the social issues that hamper the company's operation. The funding will increase the quality of social performance.

c) Environmental Performance → ESG Performance → Financial Support → Environmental Performance

Environmental issues are essential for the mining industry. The environmental issue for mining companies can be viewed from ESG performance and the sustainability of the business process. Lenders and Investor will view the management of the environment; the funding can be obtained as a fund for environment management that is more sustained

d) Business Performance → Financial Performance → Financial Support → Business Performance

Business performance will positively impact the mining company's financial performance to obtain financial support besides the ESG performance

e) Business Performance → Financial Performance → CSR Allocation → Local Partnership → Business Performance

Business performance and financial performance related to the CSR Allocation that the company stipulates. This paper identifies that the mining company with better business performance and financial performance will disburse more effectively an efficient CSR that is allocated with a business partnership that cooperates with local businesses to increase the efficiency of the supply chain for mining companies. This partnership will increase business performance because the business performance is due to business efficiency.

#### 4. Causal Loop Diagram Analysis for ESG Performance and Financing (Complex Version)

Figure 4 below shows a causal loop diagram (CLD) constructed using variables acquired from the interview to describe the system corresponding to two main variables.

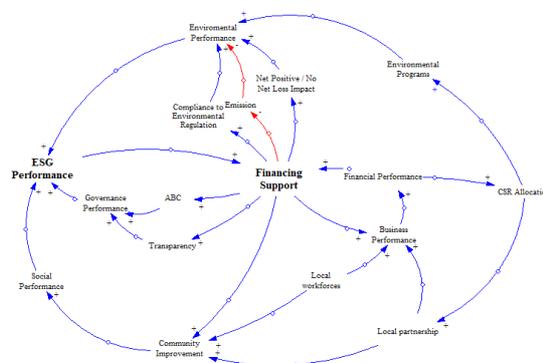


Figure 4. Complex System

Two main variables, which are the focus of this research, are introduced to the interviewee: ESG Performance and Financing Support. As an additional note from the interview, the financing support explained in this paper refers to global institutions rather than local institutions.

The open-ended questions and the discussion resulted in sixteen variables with several causal loops (CLDs). Among the CLDs discovered within the system, only eight CLDs include Financing Support and ESG Performance variables in the loop system, which answers the objective of this research. The other two CLDs are not discussed because (1) only have a Financing Support variable within the system, and (2) have none of the two main variables in the system.

This sub-section will explain each loop in detail. Deconstructing the diagram into smaller parts should simplify the explanation; therefore, the eight CLDs will be divided into three principal causal loop diagrams (CLD), which are:

### 1) The Environmental Loops

#### a. Loop Number 1 of length 3

*Financing Support – Emission – Environmental Performance – ESG Performance*

This loop explains that:

- a) Better financing support will trigger the company to reduce emissions, as global financiers include covenants that support environmental sustainability.
- b) Reduced emissions will result in better environmental performance.
- c) The better environmental performance will result in a higher ESG Performance.
- d) Higher ESG Performance results in better financing support.

#### b. Loop Number 2 of length 3

*Financing Support – Compliance to Environmental Regulation – Environmental Performance – ESG Performance*

This loop explains that:

- a) Better financing support will trigger the company to comply with environmental

regulations, as global financiers include covenants that support environmental sustainability.

- b) Better compliance with environmental regulations will result in better environmental performance.
- c) The better environmental performance will result in a higher ESG Performance.
- d) Higher ESG Performance results in better financing support.

#### c. Loop Number 3 of length 6

*Financing Support – Business Performance – Financial Performance – CSR Allocation – Environmental Programs – Environmental Performance – ESG Performance*

This loop explains that:

- a) Better financing support will trigger the company to improve business performance.
- b) Improved business performance will result in better financial performance.
- c) Better financial performance will increase the annual CSR Allocation.
- d) An increase in CSR Allocation will support more environmental programs.
- e) More environmental programs will result in better Environmental Performance.
- f) The better environmental performance will result in a higher ESG Performance.
- g) Higher ESG Performance results in better financing support.

#### d. Loop Number 4 of length 3

*Financing Support – Net Positive / No Net Loss Impact – Environmental Performance – ESG Performance*

This loop explains that:

- a) Better financing support will trigger the company to initiate more projects/activities to reach net positive/no net loss impact, as global financiers include covenants that support environmental sustainability.
- b) More projects/activities to reach Net Positive/No Net Loss Impact will result in better environmental performance.

- c) The better environmental performance will result in a higher ESG Performance.
- d) Higher ESG Performance results in better financing support.

## 2) The Social Loops

### a. Loop Number 5 of length 3

*Financing Support – Community Improvement – Social Performance – ESG Performance*

This loop explains that:

- a) Better financing support will trigger the company to improve the community, as global financiers include covenants that support community improvement.
- b) The improved community will result in better social performance.
- c) Better social performance will result in a higher ESG Performance.
- d) Higher ESG Performance results in better financing support.

### b. Loop Number 6 of length 7

*Financing Support – Business Performance – Financial Performance – CSR Allocation – Local Partnership – Community Improvement – Social Performance – ESG Performance*

This loop explains that:

- a) Better financing support will trigger the company to improve business performance.
- b) Improved business performance will result in better financial performance.
- c) Better financial performance will increase the annual CSR Allocation.
- d) An increase in CSR Allocation will support more local partnerships.
- e) The more local partnership will result in an improved community.
- f) An improved community will result in better social performance.
- g) Better social performance will result in a higher ESG Performance.
- h) Higher ESG Performance results in better.

## 3) The Governance Loops

### a. Loop Number 7 of length 3

*Financing Support – Transparency – Governance Performance – ESG Performance*

This loop explains that:

- a) Better financing support will trigger the company to improve transparency, as global financiers include covenants that support good corporate governance practices.
- b) An improved level of transparency will result in better governance performance.
- c) Better governance performance will result in a higher ESG Performance.
- d) Higher ESG Performance results in better financing support.

### b. Loop Number 8 of length 3

*Financing Support – ABC – Governance Performance – ESG Performance*

This loop explains that:

- a) Better financing support will trigger the company to improve the behaviour of anti-bribery and corruption (ABC), as global financiers include covenants that support good corporate governance practices.
- b) Improved behaviour levels of anti-bribery and corruption (ABC) will result in better governance performance.
- c) Better governance performance will result in a higher ESG Performance.
- d) Higher ESG Performance results in better financing support.

## E. CONCLUSION

This paper examines the relationship of the ESG factor with the funding process in the case of a mining company in Indonesia. This paper concludes that there is a causal effect between sustainability and the financing process. This relation forms an interconnected system in which the sustainability issue is represented by "ESG Performance" and the financing process issue is represented by "Financing Support." It is confirmed that several causal loop diagrams explain the system between two main variables.

The 8 CLDs that have been identified are creating the reinforcing loop mechanism. The reinforcing loop means that the increase in ESG Performance will increase Financing Support, and the increase in Financing Support will increase the ESG Performance, and vice versa. Therefore, financial support, which in this case is the global financial institution investor, has an essential role in shaping the mining industry in Indonesia, particularly in their ESG practices.

This paper suggests several recommendations that can be delivered to mining companies and policy-makers. First, the mining company needs to understand its stakeholder's preferences related to ESG issues. Second, the mining company may prioritize sustainability to increase financing support and business performance. Moreover, the mining company might need to increase the local partnership activities and CSR allocation because there are direct relations with the increase of financing support.

For the policy-maker (the government), at least two policy recommendations can be proposed. First, the government should encourage mining companies to increase local partnerships and CSR Allocation to support the company's financing activity and trigger community improvement. Second, it is necessary to create a supporting environment to attract global investors to finance the mining company in Indonesia. It is believed that global investors are most likely concerned with ESG performance and thus support sustainability practices in Indonesia's mining sector.

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