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CARBON EMISSION DISCLOSURE STUDY: STUDY OF OWNERSHIP CONCENTRATION FACTORS WITH THE MEDIATING EFFECT OF CSR DEPARTMENT AND COMPANY AGE

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ABSTRACT

This study aims to investigate the factors that influence carbon emissions disclosure in mining companies in Indonesia by considering the role of ownership concentration, the existence of a CSR Department, and company age as mediators. Data was collected from audited financial reports of mining companies listed on the Indonesia Stock Exchange during 2017-2021. The analysis method used is Path Regression with the AMOS 23.00 software tool. The research results show that ownership concentration does not significantly affect the disclosure of carbon emissions. This finding is based on agency theory, highlighting interest differences between managers and shareholders. The existence of a CSR Department has a positive and significant influence on carbon emissions disclosure. However, the CSR Department cannot mediate the relationship between ownership concentration and carbon emissions disclosure. Furthermore, company age plays a vital role as a mediator in the relationship between ownership concentration and carbon emissions disclosure, showing that the older the company, the higher the level of carbon emissions disclosure carried out, reflecting experience, deep understanding of stakeholder needs, and commitment company towards sustainable practices.

Keywords: Disclosure of Carbon Emissions, Ownership Concentration, Corporate Social Responsibility Department, Company Age

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I. INTRODUCTION

In recent decades, concerns about climate change have taken center stage at the global level. The increasingly felt impacts of rising global temperatures, extreme weather, and declining environmental quality have prompted the international community to act decisively to reduce greenhouse gas emissions and take steps to overcome the climate crisis. One of the most ambitious goals in the fight against climate change is creating a carbon-free future. This future promises a world where renewable energy sources become the norm, electricity-based transportation replaces fossil fuels, and industry transforms towards environmentally friendly production processes. However, achieving a carbon-free future is a challenging task. This requires a strong commitment from all sectors of society, including government, business and society.

Increasing awareness of climate change and its increasingly felt impacts has sparked global attention to efforts to reduce carbon emissions. With increasing pressure from civil society, investors and regulators, companies face demands to account for and reduce their carbon footprint. Public interest in Corporate Social Responsibility (CSR) is also increasing. Companies are now expected to consider financial profits and pay attention to the social and environmental impacts of operational activities.

Ali et al (2021) state that to achieve a carbon-free future, broader monitoring, climate risk assessment and oversight from the top leadership are needed to create resilience to climate risk. Additionally, the decarbonization of manufacturing supply chains results from pressure from society, competition, customers, and regulatory bodies. Furthermore, Ali et al. (2021) stated that the role of the CSR department and company practices had been recognized as having many benefits, such as increasing employee motivation, improving business image, reducing resource consumption, and energy conservation.

According to Law Number 40 of 2007 concerning Limited Liability Companies, companies operating in the natural resources sector must carry out Social and Environmental Responsibility. The aim of corporate social responsibility, as explained in Article 1 point 3 of the law, is to improve the quality of life and the environment, which benefits the company itself, the local community and society in general. Ali et al. (2020) stated that corporate social responsibility (CSR) has become increasingly important in recent years in the context of social issues and environmental protection.

The CSR department will implement the company's CSR Initiatives (Jose & Saraf, 2013). The Global Reporting Initiative (GRI) Sustainability Reporting Framework, Carbon Disclosure Project, and United Nations Global Compact (GC) are three of the most popular global sustainability initiatives companies can participate in. Member companies must adhere to the principles of this initiative and use corporate guidelines to report progress in adopting sustainable business practices. Approximately 25% of the companies studied have published Sustainability Reports based on the GRI framework (Jose & Saraf, 2013).

Cogan (2008) found the fact that at the corporate level, companies that have a Corporate Social Responsibility (CSR) department, with CSR managers placed in each company business are better at coordinating and synthesizing sustainability policies in general by the company's global strategy, with the presence of a CSR manager companies are better at integrating specific climate-related issues into the company's business units. Research conducted by Tommy Andrian (2021) and Kleemann & Murphy-Bokern (2014) states that there is a positive influence between the disclosure of corporate social responsibility and the disclosure of carbon emissions. However, research by Kholmi et al (2020) states that the disclosure of corporate social responsibility has no influence on the disclosure of carbon emissions.

The ownership concentration factor also significantly influences company policies regarding the disclosure of carbon emissions. A company's ownership structure, especially in the context of ownership concentration, can influence company policies regarding the disclosure of carbon emissions. Major shareholders, both individuals and entities, may have different interests in disclosing and managing environmental risks. Ownership concentration is the percentage of shares owned mainly by small groups or individuals who are the dominant shareholders (Kamijaya, 2019). Companies controlled by investors with concentrated ownership tend to have higher demands for disclosure of their biological assets than companies that are not owned by investors with concentrated ownership

(Nuryaman, 2009). Therefore, these investors have significant ownership and play a prominent role in the company, so they demand more information. Ownership concentration is the level of ownership owned by management and active in every decision-making, measured by the share ratio at the end of the year in the form of ownership percentage (Anggraeni & Mindarti, 2009). The concentration of ownership makes the company grow and perform well, thereby increasing the value and performance of the company (Alfiani & Rahmawati, 2019).

The research results of Sukarti and Suwarti (2018) show that companies that have good values and performance will disclose more information. Disclosure of extensive information can invite investors to invest their capital. Extensive disclosure is also a form of effort by controlling shareholders to align the interests of controlling shareholders with minority shareholders. Research result Wahyuni et al., (2020) show that the more concentrated company ownership is, the more majority shareholders will control the company and have more influence on decision-making. Furthermore, Putri and Siregar (2019) stated that companies controlled by several investors have a higher demand for public disclosure. Nuryaman (2009) research found that ownership concentration influences the level of disclosure.

Furthermore, research by Chithambo and Tauringana (2014) shows that ownership concentration does not affect the level of disclosure of carbon emissions. Ghomi, Z & Leung (2013) found a positive relationship between company size, company age and Corporate Governance with voluntary disclosure of greenhouse gas emissions. Gonzalez-Gonzalez & Zamora Ramirez (2016) state that carbon disclosure and the level of transparency in this regard can be explained by the influence of pressure from society, markets, shareholders and international interactions.

Study Okudo & Ndubuisi (2021) concluded a significant positive relationship between concentrated ownership and carbon emission disclosure of listed manufacturing companies in Nigeria, with a significance level of 5%. Ownership concentration is a significant internal management mechanism through which owners can control and influence company management to protect the company's interest. Yu et al., (2020) found that high ownership concentration can influence corporate disclosure. Thus, highly concentrated ownership in a company is related to better corporate social responsibility disclosure. This suggests that shareholders with greater ownership may be more motivated or interested in making CSR disclosures, perhaps as part of an effort to maintain the company's reputation and meet stakeholder demands.

Apart from that, the role of company age is also a factor that must be addressed. A company's age can influence its carbon emissions disclosure strategy, with more established companies tending to have more excellent resources and capacity to implement socially and environmentally responsible practices. In contrast, newer companies may face different challenges in managing environmental risks. Company age is how long a company can survive, compete and take advantage of business opportunities in the economy (Wardana & Sudiartha, 2015). Company age shows how long the company can survive. Older companies have more experience in publishing financial reports. Companies with more experience will be more aware of users' needs for information about the company. As a result, established older companies tend to be more skilled at collecting, processing and producing information when needed due to learning experiences (Hardi & Al Azhar, 2017), Aryni et al., (2021). Companies with a longer lifespan are considered to have understood how to gain legitimacy, so the company focuses on maintaining that legitimacy. The longer the company's age, the more complete the information needs that should be conveyed.

Akhiroh & Kiswanto Research (2016) and Ghomi, Z & Leung (2013) concluded that the longer the company's age, the higher the company's disclosure level. Study Putra (2020) stated that the research results showed that company age and operational coverage positively affected Carbon Emission Disclosure. However, Chithambo & Tauringana (2014) research and Dwinanda & Kawedar (2019) show that company age does not influence the decision to disclose carbon emissions.

The rising global temperatures, extreme weather and decreasing environmental quality have caused deep concern among the international community. Therefore, research on carbon emissions disclosure is relevant because it is a concrete effort to reduce the negative impacts of climate change. Furthermore, the

demand for decisive action in overcoming the climate crisis is increasingly urgent. Pressure from civil society, investors and regulators is increasing, forcing companies to take concrete steps to reduce carbon emissions. This research explores further factors such as ownership concentration and company age influencing company policies regarding carbon emissions disclosure, enabling companies to respond more effectively to these demands. Besides that, this research also seeks to provide input for companies and other stakeholders in managing environmental risks, promote transparency in carbon emissions reporting, and contribute to global efforts to create a carbon-free future.

II. LITERATURE REVIEW

2.1 Carbon Emission Disclosure

Carbon emissions are the release of CO2 into the atmosphere, mainly from burning fossil fuels, which causes global warming. Disclosure of carbon emissions is part of Corporate Social Responsibility (CSR) and is usually done voluntarily in a company's annual report (Jannah & Muid, 2014). The annual report includes data on greenhouse gas emissions, energy use, corporate governance and strategies related to climate change (Najah, 2012).

In this research, the disclosure of carbon emissions is measured based on the method used by Sari et al., (2021), Purnayudha & Hadiprajitno (2022) and Suhardi & Purwanto (2015), namely dummy variables. Dummy variables are used to indicate whether the company has disclosed carbon emissions or not. If the company has disclosed carbon emissions, it is given the notation 1; if it has not, it is given the notation 0.

2.2 Concentration of Ownership

Ownership concentration refers to the percentage of shares owned by a small group or individuals who significantly influence the company (Kamijaya, 2019). Ownership concentration can be measured by looking at the percentage of share ownership by management who are active in decision-making (Anggraeni & Mindarti, 2009). Companies with managerial ownership, such as directors and commissioners, can share ownership, increasing transparency and information disclosure (Intan Maya & Poppy, 2019; Ismanto & Rosini, 2023; Ratnadi & Ulupui, 2016).

Ownership concentration can affect the quality of financial reports because dominant shareholders have greater access to corporate information, reducing agency conflicts (Alfiani & Rahmawati, 2019; Sukarti & Suwarti, 2018; Yusuf, 2020) . In addition, companies with good ownership concentration often achieve better performance and encourage greater disclosure of information (Ding et al., 2007; Wahyuni et al., 2020). Qosasi et al (2022) show that companies with concentrated and family ownership tend to disclose more extensive carbon emissions. This shows that ownership characteristics influence carbon emission accountability, such as being incredibly concentrated and family ownership.

2.3 Corporate Social Responsibility Department

Law no. 40 of 2007 concerning Limited Liability Companies requires companies in the natural resources sector to carry out Social and Environmental Responsibility. The aim is to improve the quality of life and the environment, benefiting companies, local communities and the general public (Anthoni & Yusuf, 2022; Suripto, 2019). Accountability and disclosure through sustainability reports are crucial in achieving corporate goals and meeting stakeholder expectations (Galbreath, 2010; Rohyati & Suripto, 2021). Good corporate governance and strict supervision, including an independent board of directors, are relevant in addressing environmental threats such as climate change (Clark et al., 2020).

Disclosure of corporate social responsibility also influences disclosure of carbon emissions. This relates to CSR initiatives within the company, which the CSR department or related departments often oversee. In this research, the Corporate Social Responsibility department is measured based on the method used by Cogan (2008), namely a dummy variable on the existence of the Corporate Social Responsibility department. Dummy variables show whether the company's structure and governance

have a Corporate Social Responsibility department. If the company has a Corporate Social Responsibility department, the notation is 1, whereas if it does not have a Corporate Social Responsibility department, it is given the notation 0.

2.4 Age of Company Assets

The age of a company's assets describes how much a company can survive, compete and adapt in the economy (Wardana & Sudiartha, 2015). The longer a company is, the greater its experience, increasing consumer confidence and improving skills in disclosing financial statements (Nengsi, 2019). Long-lived companies have better knowledge of stakeholder needs and expertise in gathering and processing the necessary information (Hardi & Al Azhar, 2017; Rosini & Hakim, 2020). Company age reflects the company's resilience and ability to survive for an extended period. Companies operating for a long time have a more solid strategy, a lower level of earnings management, and more experience. This also contributes to the broader disclosure of financial information (Prasetyoningrum, 2019; Sunaryo & Mahfud, 2016).

III. METHODS

3.1 Sampling Method

This research uses numerical data, and the method used is quantitative causal; data was collected from mining companies on the Indonesia Stock Exchange from 2017 - 2021. The population and sample in this research are audited financial reports of mining sector companies listed on the Indonesia Stock Exchange (BEI) 2017-2021 period. The following is the population of mining issuers on the Indonesia Stock Exchange as of December 31, 2017, when data collection began.

Table 1. Research Issuer

No	Issuer	Name	IPO
1	ADRO	Adaro Energy Tbk.	16-Jul-08
2	AIMS	Akbar Indo Makmur Stimec Tbk	20-Jul-01
3	AKRA	AKR Corporindo Tbk.	03-Oct-94
4	APEX	Apexindo Pratama Duta Tbk.	10-Jul-02
5	ARII	Atlas Resources Tbk.	08-Nov-11
6	MEANING	Ratu Prabu Energy Tbk	30-Apr-03
7	BBRM	Bina Buana National Shipping	09-Jan-13
8	BIPI	Benakat Integra Tbk	11-Feb-10
9	BSSR	Baramulti Suksessarana Tbk.	08-Nov-12
10	BULL	Buana Lintas Laut Tbk.	23-May-11
11	EARTH	Bumi Resources Tbk.	30-Jul-90
12	BYAN	Bayan Resources Tbk.	12-Aug-08
13	CANI	Capitol Nusantara Indonesia Tb	16-Jan-14
14	CNKO	Indonesian Energy Exploitation Tb	21-Nov-01
15	GOD	Darma Henwa Tbk	26-Sep-07
16	DOID	Delta Dunia Makmur Tbk.	15-Jun-01
17	DSSA	Dian Swastika Sentosa Tbk	10-Dec-09
18	DWGL	Dwi Guna Laksana Tbk	13-Dec-16
19	ELSA	Elnusa Tbk.	06-Feb-08
20	ENRG	Energi Mega Persada Tbk	07-Jun-04
21	FIRE	Alfa Energy Investama Tbk.	09-Jun-16
22	GEMS	Golden Energy Mines Tbk.	17-Nov-11
23	GTBO	Garda Tujuh Buana Tbk	09-Jul-09
24	HITS	Humpuss Intermodal Transportation	15-Dec-97
25	HRUM	Harum Energy Tbk.	06-Oct-10
26	INDY	Indika Energy Tbk.	11-Jun-08
27	ITMA	Sumber Energi Andalan Tbk.	10-Dec-90

28	ITMG	Indo Tambangraya Megah Tbk.	18-Dec-07
29	KKGI	Resource Alam Indonesia Tbk.	01-Jul-91
30	COFFEE	Mitra Energi Persada Tbk.	23-Apr-01
31	LEAD	Logindo Samudramakmur Tbk.	11-Dec-13
32	MBAP	Mitrabara Adiperdana Tbk.	10-Jul-14
33	MEDC	Medco Energy International Tbk	12-Oct-94
34	MITI	Mitra Investindo Tbk.	16-Jul-97
35	MTFN	Capitalinc Investment Tbk.	16-Apr-90
36	MYOH	Samindo Resources Tbk.	27-Jul-00
37	PGAS	Perusahaan Gas Negara Tbk.	15-Dec-03
38	PKPK	Perdana Karya Perkasa Tbk	11-Jul-07
39	PTBA	Bukit Asam Tbk.	23-Dec-02
40	PTIS	Indo Straits Tbk.	12-Jul-11
41	PTRO	Petrosea Tbk.	21-May-90
42	KING	Rukun Raharja Tbk.	19-Apr-06
43	RIGS	Rig Tenders Indonesia Tbk.	05-Mar-90
44	RUIS	Radiant Utama Interinsco Tbk.	12-Jul-06
45	SHIP	Sillo Maritime Perdana Tbk.	16-Jun-16
46	SMMT	Golden Eagle Energy Tbk.	29-Feb-00
47	SMRU	SMR Utama Tbk.	10-Oct-11
48	SOCI	Soechi Lines Tbk.	03-Dec-14
49	VISITOR	Tamarin Samudra Shipping Tbk.	10-May-16
50	TOBA	TBS Energi Utama Tbk.	06-Jul-12
51	TPMA	Trans Power Marine Tbk.	20-Feb-13
52	TRAM	Trada Alam Minera Tbk.	10-Sep-08
53	WINS	Wintermar Offshore Marine Tbk.	29-Nov-10

Source: Indonesian Stock Exchange, 2023

The sample collection method used in this research is saturated sampling, where all members of the population become members of the sample (Sugiyono, 2016), so the sample in this study was 53 mining issuers.

3.2 Data Analysis Techniques

The analysis method uses Path Regression (Path Analysis) with the AMOS 23.00 software tool. Data analysis in quantitative research is based on a statistical approach. According to Ghozali (2011) Path analysis is a further development of multiple and bivariate regression analysis. To calculate the mediating effect of company size on liquidity ratios, activity ratios, and profitability ratios on accounting profits, the Sobel test is used with the following formula:

$$Sab = \sqrt{b^2Sa^2 + a^2Sb^2 + Sa^2Sb^2}$$

With description:

Sat : The size of the standard error of indirect influence
a : Path of independent variable (X) with intervening variable (Y1)
b : Path of intervening variable (Y1) with dependent variable (Y2)
Sa : Standard error coefficient a
Sb : Standard error coefficient b

To test the significance of the indirect effect, we need to calculate the t value of the coefficient using the following formula:

$$t = \frac{ab}{sab}$$

This calculated t value is compared with the t table value, if the calculated t value > t table value then it can be concluded that there is a mediation effect.

IV. RESULTS AND DISCUSSION

4.1 Descriptive Statistics

The results of descriptive statistical analysis can be seen in the following table:

Table 2. Descriptive Statistical Test Results

Research Variable	Mean	Std. Deviation	Minimum	Maximum
CARBON	0.43	0.49	0.00	1.0
CSR	0.11	0.32	0.00	1.0
OWNERSHIP	67.72	19.61	14.63	100
ASSET_AGE	13.73	7.98	0.00	31.0

Source: processed data (2024)

Based on Table 2, some companies in the mining sector may not disclose carbon emissions for various reasons, such as less stringent regulations, concerns about competitive impacts, limitations in reporting systems, high costs, lack of awareness of carbon emissions issues, internal policies that are not yet strong in reducing carbon emissions and awareness of climate change, this is based on the average value of mining company carbon emission disclosure of 0.43, with a dummy variable indicating whether carbon emissions are disclosed or not.

The average concentration of share ownership in mining companies reached around 67.72%, indicating the dominance of major shareholders in these entities. Some companies even show very high levels of ownership concentration. Factors supporting high ownership concentration include the founder's desire to maintain control of the company and retain share ownership and belief in the company's long-term growth. Furthermore, the average presence of a Corporate Social Responsibility (CSR) Department in mining companies is 0.11, with a dummy variable identifying the presence of CSR. Data shows that few mining companies have a CSR department. The average level of international operations of mining companies is 0.60, indicating that most have a high level of international operations. Lastly, the average asset age of mining companies is around 13.73 years, indicating that most companies have been operating for a considerable period, reflecting the stability, experience and reputation they have built over the years.

4.2 Path Analysis

4.2.1 Initial Model

The initial image of the path analysis is as follows:

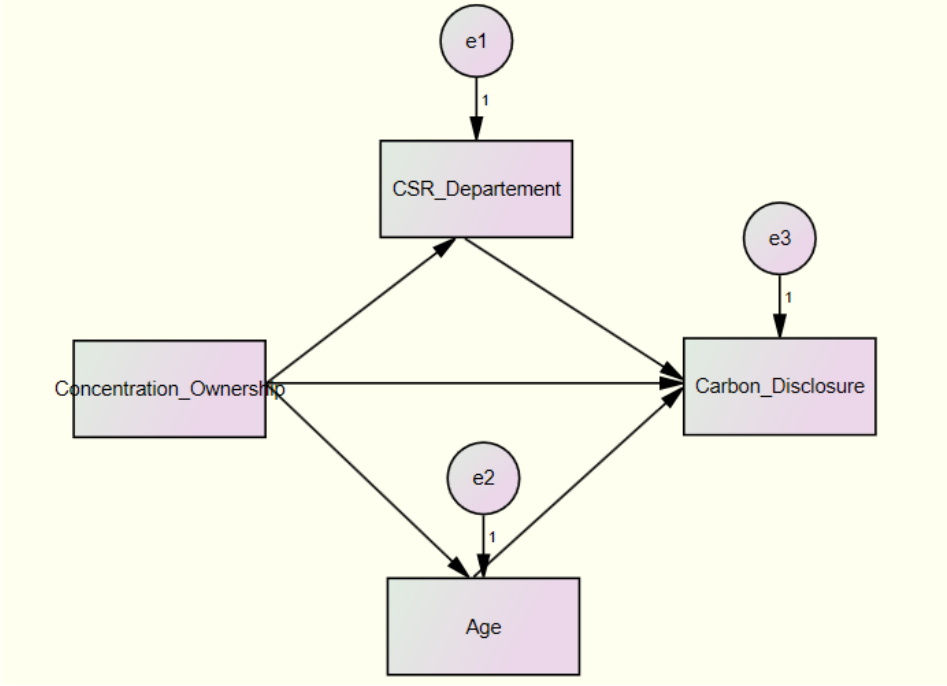

Figure 1. Initial Research Model

4.2.2 Conformity Test

The goodness of fit test results is based on the following table:

Table 2. Results of measuring the level of conformity

Goodness of Fit Size	Acceptance Limits	Results	Conclusion
Chi–Square	The smaller, the better	0,000	Good Fit
RMSEA	0.05 <RMSEA<0.08	0.041	Good Fit
TLI	0.80<TLI<1	0.957	Good Fit
GFI	0.80<GFI<1	0.997	Good Fit
NFI	0.80<NFI<1	0.979	Good Fit

Source: processed data (2024)

From Table 2, chi square 0.000 (small), RMSEA value of 0.041 (below 0.05), NFI 0,979 (>0.8), TLI 0,957 (> 0.8) and GFI 0,997 (>0.80) are all criteria included in good fit conclusion so that hypothesis testing can be continued.

4.2.3 Hypothesis Testing

Hypothesis testing from the results of data processing with AMOS 233 can be briefly seen in the following image:

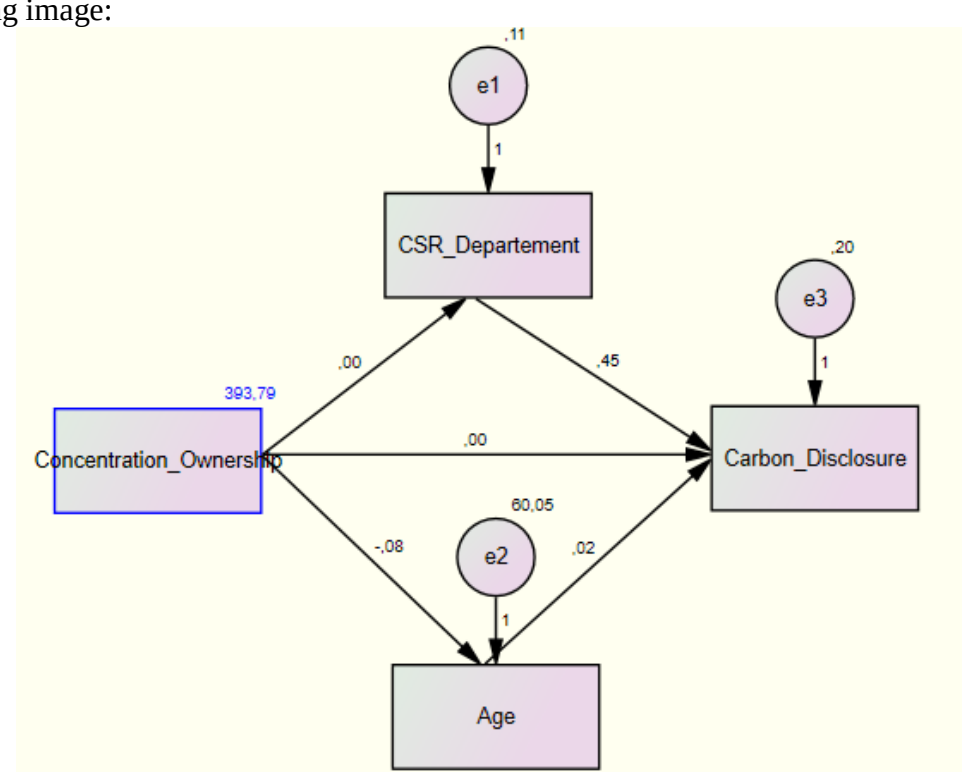

Figure 2. Final Research Model

Source: processed data (2024)

To clarify the results of data processing in Figure 2, a path analysis summary table is presented:

Table 3. Regression Weight Results

Regression Weights: (Group number 1 - Default model)

			Estimate	S.E	CR	P	Label
CSR_Department	<---	Concentration_Ownership	-,001	,001	-,748	,454	
Age	<---	Concentration_Ownership	-,083	,024	-3,527	***	
Carbon_Disclosure	<---	Age	,017	,003	4,854	***	
Carbon_Disclosure	<---	CSR_Department	,452	,083	5,457	***	
Carbon_Disclosure	<---	Concentration_Ownership	-,001	,001	-,972	,331	

Source: processed data (2024)

From the results of data processing in table 3, the results of hypothesis testing can be seen as follows:

1) The Effect of Concentration Ownership on Carbon Disclosure
   Based on table 3, the P value is 0.331, greater than 0.05 (0.331 > 0.05), thus it can be concluded that Concentration Ownership has no influence on Carbon Disclosure

2) The Influence of Departmental CSR on Carbon Disclosure
   Based on table 3, the P value is 0.000, smaller than 0.05 (0.000 < 0.05), thus it can be concluded that the Department's CSR has a significant influence on Carbon Disclosure

3) The Effect of Company Age on Carbon Disclosure
   Based on table 3, the P Value is 0.000, smaller than 0.05 (0.000 < 0.05), thus it can be concluded that Company Age has a significant influence on Carbon Disclosure

Furthermore, to test the hypothesis, the influence of Concentration Ownership through Departmental CSR and Company Age on Carbon Disclosure can be calculated using a Sobel test, which can be seen in the following table.

Table 4. Sobel Test Results for Departmental CSR Mediation on Ownership Concentration on Carbon Disclosure

Input:			Test statistic:	Std. Error:	*p*-value:
a	-0.001	Sobel test:	-0.98355506	0.00045956	0.32533433
b	0.452	Aroian test:	-0.96789562	0.00046699	0.3330965
s_a	0.001	Goodman test:	-1	0.000452	0.31731051
s_b	0.083	Reset all	Calculate		

Source: processed data (2024)

Based on calculations using the Sobel test, the CSR Department is unable to mediate the relationship between Concentration Ownership and Carbon Disclosure, because the p-value of 0.325 is greater than 0.05 (0.325 > 0.05).

Table 5. Sobel Test Results Mediation of Company Age on Concentration Ownership Against Concentration Ownership

Input:			Test statistic:	Std. Error:	*p*-value:
a	-0.083	Sobel test:	-2.95200559	0.00047798	0.00315717
b	0.017	Aroian test:	-2.91907364	0.00048337	0.00351073
s_a	0.024	Goodman test:	-2.98607787	0.00047253	0.00282581
s_b	0.003	Reset all	Calculate		

Based on calculations using the Sobel test, Company Age is able to significantly mediate the relationship between Ownership Concentration and Carbon Disclosure, because the p-value of 0.003 is smaller than 0.05 (0.003 > 0.05).

4.2.4 Discussion

1) The Effect of Ownership Concentration on Carbon Emission Disclosure
   The concentration of share ownership does not significantly affect Carbon Emissions Disclosure. The results of research that concludes that ownership concentration does not affect carbon emissions disclosure can be explained by the concept of agency problems, as described in theory by Jensen and Meckling (1976). This theory states that differences in interests between managers and shareowners can encourage managers to take actions that benefit themselves, even by ignoring their responsibilities to shareowners.

In Indonesia, findings from Darmadi and Sodikin (2013) show that although some companies have a high level of ownership concentration, the effect tends to be weaker because it is usually related to family ownership rather than institutional ownership. The findings of this research are also in line with research by Amelia (2016), which also confirms that ownership concentration does not significantly impact the level of disclosure. These results are also consistent with research by Duwu et al. (2018), which shows that neither concentrated nor dispersed ownership affects the level of disclosure. These findings also receive support from research by Borghei-Ghomi and Leung (2021) and Chithambo and Tauringana (2014), which found that ownership concentration did not affect carbon emissions disclosure. Gonzalez-Gonzalez and Zamora Ramirez (2016) also explain that pressure from society, markets, and international interactions encourages disclosure of carbon emissions more than ownership concentration.

2) The Influence of the CSR Department on Carbon Emission Disclosure
The research results show that the CSR Department positively and significantly affects Carbon Emission Disclosure. Thus, this research reveals that the presence of CSR departments in mining companies in Indonesia facilitates more efficient and accurate disclosure of carbon emissions and ensures compliance with standards and regulations related to carbon emissions. The research findings validate the research results by Jose & Saraf (2013), which confirmed that the CSR department plays a role in implementing the company's CSR initiatives, ensuring compliance with the principles of these initiatives, and reporting progress in sustainable business practices and carbon emissions disclosure.

The results of this research are in line with the findings of Bhaskara (2018) , Andrian & Kevin (2021), and Murphy-broken & Kleemann (2014), which show that the existence of a CSR department has a significant positive impact on carbon emissions disclosure. Furthermore, this research supports the results of Ali et al. (2021), which state that CSR departments provide additional benefits, such as increasing employee motivation, improving business image, increasing resource use efficiency, and promoting energy conservation. This aspect is essential in achieving the vision of a carbon-free future and protecting consumer rights.

3) The Effect of Asset Age on Carbon Emission Disclosure
The age of company assets has a significant effect on Carbon Emission Disclosure. Long-lived assets reflect a company's ability to survive, maintain legitimacy, and compete in the marketplace. Companies with a long history have experience and a deep understanding of stakeholder needs, including the demand for transparency in terms of carbon emissions. The findings of this research are in line with the results of research conducted by Akhiroh & Kiswanto (2016), Dwinanda & Kawedar (2019), and Borghei-Ghomi & Leung (2013), which also confirmed that the older the company's assets, the higher the level of carbon emission disclosure, which is conducted. Putra's (2020) research results also concluded that the company age variable positively influences carbon emissions disclosure. This finding is also supported by research by Ciriyani and Putra (2016), which states that asset age reflects the level of experience, high awareness, and extensive opportunities for disclosure, including greater environmental disclosure.

4) Mediating the CSR Department on Ownership Concentration on Carbon Emission Disclosure
The research results show that the CSR Department cannot mediate the relationship between Ownership Concentration and Carbon Disclosure. Thus, the presence of a CSR Department in a mining company does not affect the relationship between the level of ownership concentration and carbon emission disclosure. The research findings show that the CSR Department can promote sustainable practices and increase environmental awareness but needs to be seen as an effective mediator in the relationship between ownership concentration and carbon emission disclosure in mining companies. This can be caused by several factors, such as the company's priority in managing CSR, the limited authority and resources possessed by the CSR Department, or the company's focus on short-term interests rather than environmental

sustainability. In addition, the results of this study indicate that there are factors outside the CSR Department that are more influential in influencing the relationship between ownership concentration and carbon emissions disclosure, such as pressure from external stakeholders and government regulations.

5) Mediation of Company Age on Ownership Concentration on Carbon Emission Disclosure
The research results show that Company Age can significantly mediate the relationship between Ownership Concentration and Carbon Disclosure. Thus, company age is vital in bridging or linking the relationship between the level of ownership concentration and carbon emission disclosure. Company Age allows companies to develop experience, skills, and a deep understanding of stakeholder needs, including disclosure of carbon emissions. As companies age, they have more time to learn and adapt to market demands and regulatory requirements, including those related to sustainable practices such as carbon emissions disclosure.

The findings of this research reveal that companies operating for a more extended period tend to have greater credibility in the eyes of stakeholders. This can increase public, investor and government confidence in companies so that companies feel more motivated to make more transparent and measurable disclosures of carbon emissions. Additionally, companies operating for a long time may have developed a corporate culture that includes sustainable practices, including disclosure of carbon emissions.

V. CONCLUSION

From the research results, several main findings can be concluded:

1) Ownership Concentration does not significantly influence Carbon Emission Disclosure. This finding is consistent with the concept of agency problems explained by the theory of Jensen and Meckling (1976), which states that differences in interests between managers and shareowners can lead to self-serving actions, ignoring their responsibilities to shareowners.
2) The CSR Department positively and significantly influences Carbon Emission Disclosure. These findings indicate that the existence of a CSR Department in mining companies in Indonesia facilitates more efficient and accurate disclosure of carbon emissions and ensures compliance with standards and regulations related to carbon emissions.
3) Company Age plays a vital role as a mediator in the relationship between Ownership Concentration and Carbon Emission Disclosure. The older the company, the higher the level of carbon emissions disclosure it makes, reflecting experience, a deep understanding of stakeholder needs, and the company's commitment to sustainable practices.
4) The CSR Department cannot mediate the relationship between Ownership Concentration and Carbon Emission Disclosure. Thus, although CSR departments can promote sustainable practices and increase environmental awareness, they do not act as effective mediators in the relationship between ownership concentration and carbon emission disclosure in mining companies.
5) Company Age can significantly mediate the relationship between Ownership Concentration and Carbon Emission Disclosure. This shows that company age has a significant role in linking ownership concentration and carbon emission disclosure, reflecting the company's ability to survive, maintain legitimacy, and compete in the market.

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