

The Effect Of Administrative Sanctions Enforcement On The Level Of Corporate Compliance In Waste Management In The West Java Industrial Estate

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ABSTRACT

This study aims to analyze the effect of the enforcement of administrative sanctions on the level of company compliance in waste management in the West Java Industrial Estate. The problem of industrial waste management is still an important issue, considering that many companies have not fully complied with the provisions of environmental law. Administrative sanctions, which include written reprimands, government coercion, license freezes, and license revocation, are expected to be effective instruments to improve compliance. However, its effectiveness is still often questioned in practice. This study uses a quantitative approach with a cross-sectional design. Data was collected through questionnaires and interviews with 40 companies in the Bekasi, Karawang, and Cikarang industrial estates. The analysis was performed using descriptive statistics, Pearson correlation tests, and simple linear regression with the help of SPSS software. The results showed a weak positive relationship between the implementation of administrative sanctions and the level of compliance ($r = 0.115$, $p = 0.478$), indicating that the relationship was not statistically significant. The regression analysis revealed that administrative sanctions explain only 1.3% of the variance in compliance ($R^2 = 0.013$), with a regression coefficient of 1.21 ($p = 0.478$). This indicates that administrative sanctions alone are not strong enough to encourage company compliance in waste management. Other factors, such as internal company commitments, economic incentives, and public oversight, are more dominant in influencing compliance. This study concludes that a combination of legal instruments, incentives, and community participation is needed to make environmental law enforcement more effective and able to support sustainable development in Indonesia.

Keywords:

Administrative sanctions; Corporate Compliance; waste management; Environmental Law; Industrial Estate

ABSTRAK

Penelitian ini bertujuan untuk menganalisis pengaruh penerapan sanksi administratif terhadap tingkat kepatuhan perusahaan dalam pengelolaan limbah di Kawasan Industri Jawa Barat. Permasalahan pengelolaan limbah industri masih menjadi isu penting, mengingat masih banyak perusahaan yang belum sepenuhnya mematuhi ketentuan hukum lingkungan. Sanksi administratif, yang meliputi teguran tertulis, paksaan pemerintah, pembekuan izin, dan pencabutan izin, diharapkan menjadi instrumen yang efektif untuk meningkatkan kepatuhan. Namun, efektivitasnya masih sering dipertanyakan dalam praktik. Penelitian ini menggunakan pendekatan kuantitatif dengan desain potong lintang. Data dikumpulkan melalui kuesioner dan wawancara terhadap 40 perusahaan di kawasan industri Bekasi, Karawang, dan Cikarang. Analisis dilakukan menggunakan statistik deskriptif, uji korelasi Pearson, dan regresi linier sederhana dengan bantuan perangkat lunak SPSS. Hasil penelitian menunjukkan hubungan positif yang lemah antara penerapan sanksi administratif dengan tingkat kepatuhan ($r = 0,115$, $p = 0,478$), yang menunjukkan bahwa hubungan tersebut tidak signifikan secara statistik. Analisis regresi menunjukkan bahwa sanksi administratif hanya menjelaskan 1,3% varians kepatuhan ($R^2 = 0,013$), dengan koefisien regresi 1,21 ($p = 0,478$). Hal ini menunjukkan bahwa sanksi administratif saja tidak cukup kuat untuk mendorong kepatuhan perusahaan dalam pengelolaan limbah. Faktor-faktor lain, seperti komitmen internal perusahaan, insentif ekonomi, dan pengawasan publik, lebih dominan dalam memengaruhi kepatuhan. Studi ini menyimpulkan bahwa kombinasi instrumen hukum, insentif, dan partisipasi masyarakat diperlukan agar penegakan hukum lingkungan lebih efektif dan mampu mendukung pembangunan berkelanjutan di Indonesia.

Kata Kunci: Sanksi administratif; Kepatuhan Perusahaan; pengelolaan limbah; Hukum Lingkungan; Kawasan Industri

INTRODUCTION

Environmental issues have become an increasingly pressing global issue in the last two decades. According to a report by the United Nations Environment Programme (UNEP, 2022), around 300 million tons of industrial waste are produced annually worldwide, and most of it has not been adequately managed. Waste pollution, both liquid and solid, has been shown to have a significant contribution to environmental quality degradation, water resource pollution, and public health risks. At the global level, developed countries have implemented a range of legal instruments, from environmental licensing systems to emissions trading schemes, to encourage companies to comply with environmental standards. However, the effectiveness of these instruments still faces serious challenges, especially in the capital-intensive and waste-intensive industrial sector. This fact shows that industrial waste management is a cross-border issue that not only affects environmental aspects, but also health, social, and economic. Furthermore, the World Bank (2020) emphasizes that effective pollution management requires not only stringent regulations but also robust enforcement mechanisms, technological capacity, and stakeholder engagement, highlighting the multidimensional nature of environmental governance challenges.

In the context of Indonesia, the problem of industrial waste management is increasingly complex with increasing economic growth and industrialization. Data from the Ministry of Environment and Forestry (MoEF, 2023) shows that more than 60% of companies in West Java industrial areas do not fully comply with waste quality standards. Large industrial areas such as Bekasi, Karawang, and Cikarang are national manufacturing centers that produce significant amounts of liquid waste, including

textile, chemical, pharmaceutical, and food-beverage waste. The impact caused is very real, including the pollution of the Citarum River which is one of the most polluted rivers in the world. This condition confirms that the company's non-compliance in managing waste is not only a technical problem, but also a legal and environmental governance issue. Wibowo and Santosa (2021) documented that the Citarum River pollution has resulted in severe socioeconomic consequences, including loss of agricultural productivity, increased waterborne diseases, and displacement of traditional fishing communities, underscoring the urgent need for effective regulatory enforcement.

The legal instruments used by the government to overcome this problem include the enforcement of administrative sanctions as stipulated in Law Number 32 of 2009 concerning Environmental Protection and Management (PPLH) and strengthened by Government Regulation Number 22 of 2021. Forms of administrative sanctions that can be imposed on companies include written reprimands, government coercion, license freezes, and license revocation. Administrative sanctions are considered a preventive and repressive legal instrument that is more flexible than criminal instruments. However, implementation in the field is still often questioned for its effectiveness. Many cases show that even though companies have been subject to administrative sanctions, similar violations still occur, indicating loopholes in law enforcement and weak government oversight functions. Hidayat and Sari (2021) argue that the flexibility of administrative sanctions, while theoretically advantageous, has paradoxically contributed to inconsistent enforcement, as regulatory authorities often lack clear guidelines for escalating sanctions proportionate to violation severity.

Several previous studies have shown

inconsistencies between regulations and field practices. Research by Sutrisno (2021) revealed that in most industrial estates in West Java, administrative sanctions more often function as a formality than an effective law enforcement instrument. Companies tend to view the sanctions as just an additional cost (cost of doing business), not as an incentive to improve compliance. A similar thing was found by Rahmawati (2022), who stated that the weak supervisory capacity of local governments and the potential for conflicts of interest with industry caused the implementation of administrative sanctions to be not optimal. Meanwhile, a comparative study by Lee and Kim (2020) in South Korea shows that administrative sanctions can be effective in improving industry compliance when followed by transparency of public information and public involvement in supervision. These contrasting findings between Indonesian and international contexts highlight a critical research gap: while the theoretical framework of administrative sanctions appears sound, their practical effectiveness is highly contingent upon institutional capacity, enforcement consistency, and complementary governance mechanisms—factors that remain underexplored in the Indonesian industrial context, particularly in waste management sectors.

The urgency of this research is even stronger considering that industrial estates in West Java are the backbone of the national economy. Corporate non-compliance in waste management not only impacts environmental pollution, but also threatens economic sustainability, public health, and public trust in the government. In addition, Indonesia is facing international pressure to improve the quality of the environment, especially after the commitments stated in the Paris Agreement. Thus, strengthening environmental law instruments, including administrative sanctions, is a strategic step that must be scientifically evaluated for effectiveness. Moreover, the OECD (2021)

emphasizes that emerging economies like Indonesia must develop evidence-based environmental compliance assurance systems to balance economic growth with ecological sustainability, making empirical research on enforcement effectiveness not merely academically valuable but practically imperative for policy formulation.

The novelty of this study lies in the empirical approach used to analyze the effect of administrative sanctions enforcement on corporate compliance in the West Java industrial estate. Most previous studies have placed more emphasis on normative analysis of the law, while empirical studies measuring the direct relationship between administrative sanctions and the level of corporate compliance are still limited. This research not only examines regulations and policies, but also utilizes quantitative data in the form of the level of compliance of companies before and after the enactment of administrative sanctions. Thus, this study is expected to provide stronger empirical evidence regarding the effectiveness of administrative sanctions in the context of Indonesian environmental law.

The objectives of this study are (1) to describe the form of enforcement of administrative sanctions against companies in the West Java industrial estate, (2) to analyze the influence of administrative sanctions on the level of compliance of companies in waste management, and (3) to identify factors that support or hinder the successful implementation of administrative sanctions. With this goal, this research is expected to make academic, practical, and policy contributions in the field of environmental law.

The benefits of the research can be seen from three aspects. First, theoretically, this research enriches the study of environmental law, especially regarding the effectiveness of administrative sanction instruments in encouraging company compliance. Specifically, it contributes to the growing body of literature on regulatory enforcement

theory by testing the applicability of deterrence theory in the Indonesian industrial context, thereby advancing our understanding of how legal instruments function differently across diverse institutional and cultural settings. Second, practically, this study provides input for local governments, especially the West Java Environment Agency, to increase supervision capacity and law enforcement strategies. The findings can inform the development of risk-based inspection protocols, graduated sanction systems, and capacity-building programs for environmental inspectors, directly enhancing the operational effectiveness of regulatory agencies. Third, in terms of policy, the results of this research can be considered for policymakers in improving environmental management regulations that are more firm, transparent, and participatory. By identifying the gap between regulatory intent and enforcement outcomes, this research provides evidence-based recommendations for legislative reform, including potential amendments to Government Regulation Number 22 of 2021 to enhance sanction deterrence and enforcement consistency.

The implications of this research are quite broad. If it is found that administrative sanctions have a significant influence on improving compliance, then the government can strengthen the implementation of this instrument by ensuring transparency and consistency of enforcement. On the other hand, if the effectiveness is low, it is necessary to evaluate the supervisory mechanism and other policy alternatives, such as increasing criminal sanctions or providing economic incentives for compliant companies. In addition, this research also opens up opportunities for civil society involvement in supervision, so as to create a more participatory and equitable environmental legal system. Thus, this research not only contributes to the development of legal science, but also has strategic value in supporting sustainable development in Indonesia.

RESEARCH METHODS

This study uses a quantitative approach with a correlational analysis method to determine the influence of administrative sanction enforcement on the level of company compliance in waste management. The approach used is cross-sectional, i.e. data collection is carried out at a certain time, without intervention or manipulation of variables. This design was chosen because it is suitable for empirically measuring the relationship between variables based on field data at the time of the study. The cross-sectional design allows for efficient data collection and analysis of associations between variables, though it should be noted that this design limits causal inference, as temporal precedence cannot be definitively established (Creswell, 2018). Nevertheless, for the exploratory and descriptive purposes of this study, the cross-sectional approach provides valuable insights into the current state of regulatory enforcement and corporate compliance.

The research population in all companies operating in the West Java Industrial Estate (Bekasi, Karawang, Cikarang) that has the potential to produce industrial waste and is under the supervision of the West Java Environment Agency. According to data from the West Java Environment Agency (2023), approximately 350 companies in these three industrial zones are registered as waste-producing entities subject to environmental oversight. These companies span multiple sectors including manufacturing, textiles, chemicals, pharmaceuticals, food and beverage processing, and electronics assembly, representing the diverse industrial landscape of West Java's economic zones.

The sample was set at 40 companies from the manufacturing, textile, chemical, and food-beverage sectors. Purposive sampling is used, which is the selection of samples based on certain criteria to suit the purpose of the research. The sample size of 40

companies, while representing approximately 11.4% of the total population, was determined based on practical considerations including resource constraints, accessibility, and the intensive nature of data collection involving both questionnaires and interviews. This sample size is consistent with similar environmental compliance studies in Indonesia (Nurhalimah, 2021; Rahmawati, 2022) and meets the minimum requirements for correlation and regression analysis, though it should be acknowledged as a limitation affecting the generalizability of findings. In this study, there are several conditions that must be met so that a company can be made a respondent. In this study, there are several conditions that must be met so that a company can be made a respondent.

1. The company is required to have environmental documents such as UKL/UPL (Environmental Management Efforts/Environmental Monitoring Efforts) or AMDAL (Environmental Impact Analysis). This is important because the document is the legal and technical basis for companies in managing their environmental impacts.
2. The selected companies are companies that have been or are under the supervision of the Environmental Service (DLH). This oversight shows that the company is relevant to research because its activities

have the potential to cause significant environmental impacts.

3. Companies must be willing to participate in the research, either by filling out questionnaires or taking interviews. The willingness of respondents is the key so that the data obtained is complete and valid.

On the other hand, there are several conditions that make a company unable to be used as a research respondent.

1. If the company does not have valid environmental documents, it will be automatically removed from the sample because it does not meet the administrative requirements set out in environmental regulations.
2. Companies that refused to participate were also excluded, because without respondents' consent, the required data could not be obtained ethically or legally.
3. Companies that are difficult to access due to administrative reasons, such as constraints on research permits or do not provide access to documents, are also excluded from the research. This is done so that the research process runs effectively and in accordance with academic rules.

The main instrument of this study is a structured questionnaire compiled based on the indicators of research variables.

Table 1. Questionnaire Reliability Test

Variable	Number of Items	Cronbach's Alpha	Information
Administrative Sanctions (X)	10	0,812	Reliable
Corporate Compliance (Y)	12	0,856	Reliable

1. Independent Variable (X): Enforcement of Administrative Sanctions
 - a. Form of sanctions (written reprimand, fine, freeze/revocation of permits).
 - b. Frequency of sanctions enforcement.
 - c. The level of compliance after sanctions.
2. Dependent Variable (Y): The Company's Level of Compliance in Waste Management
 - a. Technical compliance (waste treatment, B3 waste storage).
 - b. Administrative compliance (UKL/UPL REPORT, PROPER).
 - c. Legal compliance (environmental permits, environmental audits).

3. Instrument Validity and Reliability
 - a. The validity test was performed with Pearson Product Moment Correlations.
 - b. Reliability tests were performed with Cronbach's Alpha, with a value of $\alpha > 0.7$ indicating high reliability.

Cronbach's Alpha Formula

$$\alpha = \frac{k}{k-1} \left(1 - \frac{\sum \sigma_i^2}{\sigma_t^2} \right)$$

Information:

- k = number of items
- σ_i^2 = variance of each item
- σ_t^2 = total variance

Data Collection Techniques

1. Questionnaire : Provided to the company's environmental/CSR managers to assess the company's experience and compliance.

2. Structured Interview : Conducted with West Java DLH officials to strengthen the data.
3. Field Observation : Limited to documents and company waste treatment facilities.
4. Online Survey : An alternative to data collection if respondents cannot be met in person.

This research involved 40 companies in the West Java Industrial Estate. The characteristics of the respondents can be seen in the following table:

Table 2. Descriptive Statistics of Respondents' Age

Statistics	Value
Sum	40
Average	42,2
Minimum	26
Maximum	54
Std. Dev.	8,7

Gender Distribution

1. Male: 20 respondents (50%)
2. Female: 20 respondents (50%)

2. Simple Linear Regression

- a. Equation:

$$\text{Compliance} = 71.87 + 1.21 \times \text{Administrative Sanctions}$$
- b. The regression coefficient is positive (1.21), meaning that every increase in administrative sanctions is followed by an increase in compliance.
- c. However, the results were not significant ($p = 0.478$).
- d. The value of $R^2 = 0.013 \rightarrow$ only 1.3% of the variation in compliance can be explained by administrative sanctions.

Education Distribution

1. SMA: 7 respondents (17.5%)
2. D3: 11 respondents (27.5%)
3. S1: 17 respondents (42.5%)
4. S2: 5 respondents (12.5%)

This shows that the respondents are quite diverse in terms of age, balanced in terms of gender, and the majority have higher education (S1) backgrounds.

Hypothesis Test Results

1. Pearson's correlation between *administrative sanctions enforcement* and *corporate compliance*:
 - a. $R = 0.115$
 - b. $P = 0.478$ (insignificant, $p > 0.05$).

RESULT AND DISCUSSION

Characteristics of Respondents

The descriptive results showed that the study respondents came from diverse age, education, and gender backgrounds. The age

distribution is in the range of 26–54 years, with an average of 42 years. This reflects that the majority of respondents are managers or senior staff who are directly involved in the management of the company's environment. Gender balance (50% male, 50% female) indicates fairly equal representation, although in the industrial reality the number of male workers is usually more dominant. The high proportion of respondents with S1 education (42.5%) shows that most of the respondents have sufficient academic capacity to understand the regulatory and technical aspects related to waste management. This condition strengthens the validity of the data obtained, because respondents are considered to understand the questions in the questionnaire and interview.

The Relationship between Administrative Sanctions and Compliance

The results of the Pearson correlation test showed a value of $r=0.115$ with a significance of $p=0.478$. Similarly, the result of a simple linear regression gives a positive coefficient of 1.21, but with a $p>0.05$ value > 0.05 . This indicates that although the direction of the administrative sanctions relationship tends to increase compliance, the effect is not statistically strong enough.

These findings are in line with Sutrisno's (2021) research which states that administrative sanctions in Indonesia are often perceived by companies as only an additional *compliance cost*, not as a depressive factor that drives behavior change. Rahmawati's research (2022) also shows that weak supervision and inconsistency in the implementation of sanctions make its effectiveness low. Thus, the results of this study strengthen the empirical evidence that administrative sanctions alone have not been able to encourage companies to comply with environmental regulations optimally.

Data Visualization Interpretation

- a. The age distribution histogram shows the concentration of respondents in the middle productive age (35–50 years), who generally have long experience in environmental management. This supports the quality of respondents' answers.
- b. The gender bar chart shows balance, but it should be noted that at the managerial level, women's representation in environmental issues is starting to increase, as per the global trend of *gender mainstreaming* in environmental policy.
- c. The scatter plot of the relationship between administrative sanctions and compliance shows a distribution of data that tends to be random, without a clear linear pattern. This confirms that administrative sanctions do not have significant predictive power on a company's compliance.

Other Influential Factors

The findings of this study indicate that other factors are more dominant in influencing company compliance. Some of the factors identified include:

1. Internal commitments of companies → companies that have a sustainability vision tend to be compliant without the need to be pressured by sanctions.
2. Economic incentives and reputations → companies that are active in the PROPER program and ISO 14001 certification are more adherent because they want to maintain their image and gain a competitive advantage.
3. Public and media scrutiny → the spotlight of the public, NGOs, and mass media are often more effective at encouraging changes in corporate

behavior than administrative sanctions.

4. The government's supervisory capacity → limited human resources and supervisory budgets make sanctions often not enforced consistently.

Research Implications

The results of this study have several implications. First, from the perspective of environmental law theory, these findings challenge the assumption that administrative sanctions are an effective legal instrument to improve compliance. In practice, a combination of legal instruments (administrative, criminal, civil) with economic incentives is needed to be more effective.

Second, from a practical perspective, the government needs to strengthen the mechanisms of supervision, transparency, and public involvement. For example, the results of company supervision can be published openly so that the public participates in supervising.

Third, in terms of policy, there is a need for regulatory improvements that ensure the consistency of the application of administrative sanctions, increase the amount of fines to make them more enforceable, and integration with the reward mechanism (carrot and stick approach).

CONCLUSION

Based on the research conducted, it can be concluded that the enforcement of administrative sanctions has a weak and statistically insignificant positive relationship with the level of company compliance in waste management in the West Java Industrial Estate. The quantitative analysis shows that administrative sanctions explain only 1.3% of the variance in company compliance ($R^2 = 0.013$), indicating that this legal instrument alone is not strong enough to consistently drive changes in company behavior. This finding reinforces evidence

from previous research that administrative sanctions in Indonesia are often perceived as mere compliance costs and are ineffective due to weak oversight capacity, inconsistent enforcement, and a lack of deterrent effect. Other factors such as internal company commitment, economic incentives, reputation, and public scrutiny have been shown to be more dominant in influencing compliance levels.

For future research, it is recommended to expand the scope of the study by exploring the influence of more dominant non-legal factors, such as the effectiveness of incentive systems (e.g., PROPER awards, tax breaks), the role of company leadership, and the impact of stakeholder and media pressure. Furthermore, future research could employ a mixed-methods or longitudinal approach to understand the causal mechanisms and dynamics of compliance over time. Comparative studies with countries that have effective environmental law enforcement systems can also be conducted to identify best practices that can be adapted in the Indonesian context, so that more holistic and implementable policy recommendations can be produced.

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