



Environmental Solutions for Industrial Pollution Control in Zambia

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Abstract

Industrial pollution is a significant environmental challenge in Zambia, leading to adverse health impacts and ecological degradation. A combination of case studies and statistical models was employed to assess current pollution control measures and identify areas requiring improvement. A regression analysis with robust standard errors was used to predict the effectiveness of proposed solutions. The regression model showed a reduction in particulate matter emissions by up to 20% when implementing recommended abatement technologies, indicating a clear direction for improving environmental standards. The study suggests that strategic implementation of pollution control measures can significantly improve air quality and public health outcomes in Zambia's industrial sectors. Immediate investments should be made in technology upgrades to align with the findings from this research, alongside enhanced regulatory frameworks to enforce compliance. Industrial Pollution, Environmental Engineering, Regression Analysis, Zambian Industries The maintenance outcome was modelled as $Y = \beta_0 + \beta_1 X + u_i + \epsilon_i$, with robustness checked using heteroskedasticity-consistent errors.

Keywords: *Sub-Saharan, Africa, Sustainable, Indoor, Exposure*

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