



Do Green Visual Cues in ESG Reports Signal Genuine Efforts?



Abstract

This study investigates the informational content of visual elements in ESG reports and their relationship to firms' future environmental performance. I develop a novel measure of Green Pixels using computer vision techniques to quantify the prevalence of green visual elements in more than 3,000 ESG reports from 2011 to 2023. I find that firms with higher green pixels in their ESG reports subsequently commit more environmental violations, particularly in air pollution. While these firms make more climate-related commitments, they do not reduce emissions or resource consumption but increase waste volume. Interestingly, these firms receive more favorable environmental ratings in the future, especially those with a history of environmental violations. To mitigate endogeneity concerns, I leverage the plausibly exogenous variation in natural green coverage of firms' headquarters states as an instrument variable, as a greater presence of local natural landscapes may encourage firms to incorporate green-themed visual elements in their ESG reports. The IV analysis corroborates the main findings. This paper contributes to the literature on non-financial disclosure by introducing a new, quantifiable measure of potential greenwashing. It also extends our understanding of how firms manage their environmental image and the effectiveness of current ESG evaluation methods. The results have important implications for regulators, investors, and rating agencies in assessing the credibility of ESG disclosures.

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Ms Tan is a fifth-year Ph.D. candidate in Accounting at Nanyang Business School, Nanyang Technological University. Her research interest lies in financial archival studies, with a special focus on corporate ESG practices, financial reporting and corporate disclosure, and corporate governance. She is particularly interested in using advanced technology to examine different forms of corporate communications.