Techno-Optimism in Air Pollution Visualization: A Critical Analysis of the Nafas Application

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Abstract

The growing use of air quality detection applications reflects increasing public awareness of health and environmental issues. This aligns with the Sustainable Development Goals (SDGs), specifically SDG 3 (Good Health and Well-Being) and SDG 11 (Sustainable Cities and Communities). Attractive data visualizations make air pollution data more accessible and easier to interpret in real time. However, such an approach may foster techno-optimism, including narratives that oversimplify environmental complexities or obscure structural inequalities. This study analyzes how Nafas, an Indonesian air quality detection application, shapes the narrative of techno-optimism through the visual representation of air quality data. The multimodal critical discourse analysis (MCDA) approach is used to examine several elements, both visual and textual in the application interface, including interactive maps, real-time graphs, air quality alert notifications, behavior recommendation features, and blog articles. This study argues that the visual display of the Nafas application emphasizes individual solutions while sidelining structural issues of air pollution, such as industrial policies. In addition, the simple display may reinforce the narrative that air pollution issues can be personally controlled through data and technology rather than encouraging a just systemic transformation.

Keywords: Air pollution; Air quality monitoring application; Data visualization; Techno-optimism.