

Artificial Intelligence and Climate Action in Smart Cities: Catalyst, Tool, or Barrier?

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Abstract: Climate change is intensifying environmental, social, and infrastructural challenges in urban areas, heightening the need for innovative solutions. In this context, Artificial Intelligence (AI) has emerged as an increasingly present element in debates about climate adaptation and mitigation strategies in smart cities. However, it is still unclear how AI is being constructed and represented in the global public debate. This gap is particularly relevant given the growing influence of techno-solutions narratives and sociotechnical imaginaries that shape public expectations about digital technologies in sustainability transitions.

This study investigates whether AI is portrayed as a practice, support tool, or a limiting factor and a structural driver of new environmental inequalities and energy demands. In addressing climate change. To this end, this research conducts an exploratory analysis using data from the GDELT Project, which continuously monitors content from journalistic outlets across various countries, enabling the analysis of global trends in this debate. From this database, spatial and temporal patterns of media coverage are examined, along with the main framings associated with the use of AI in the climate context. The analysis combines frequency-based trend assessment with computational text analysis techniques to identify dominant narratives and thematic associations.

The key contribution of this study is to understand how Artificial Intelligence is being integrated into the global debate on climate action and to identify possible gaps between the technological potential attributed to AI and the narratives shaping this debate. It also aims to evaluate whether current media narratives align with the material and environmental costs associated with AI infrastructures. The results are intended to support the formulation of more grounded strategies for adaptation to and mitigation of climate change.

Keywords: media framing, climate adaptation, urban resilience, GDELT Project.