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A deep-narrative analysis of energy cultures in slum rehabilitation housing of Abuja, Mumbai and Rio de Janeiro for just policy design

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Abstract

Slum rehabilitation housing (SRH) are critical transitional spaces in urban informality that has deep-rooted implications on poverty alleviation efforts. However, current literature reports systemic injustices in SRH on access to essential services, including energy injustices. This study investigated distributive injustices in the SRH across three cities, Abuja, Mumbai and Rio de Janeiro, developing 'energy cultures' narratives. It employed a computational social science methodology that used textual analysis, followed by a constructivist grounded theoretic approach to inform just policy design. The analysis was performed at two scales to identify and contrast injustices in the study areas. The result at an aggregated scale showed commonalities were around the poor design of the built environment, administrative lags of the utilities and high electricity bills. Case study-specific results showed that poverty penalties were linked with the energy cultures of each SRHs. In the Mumbai case, poverty penalties were associated with the aspirational purchase of household appliances due to move from slums to SRH. The Abuja case showed low power quality and load shedding frequently damaged appliances that increase the maintenance costs for the occupants. The Rio de Janeiro SRH case had injustices embedded through the adoption of inefficient appliances received as charity from higher-income households. Fuel stacking was also observed in the SRH that illustrated cultural identities associated with cooking energy. The conclusion was drawn to support just policy design by considering the socio-cultural context of the built environment, improving utility governance and promoting cleaner fuel mix at the household level.