

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

EPRG Working Paper 2030

Cambridge Working Paper in Economics 20101

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This paper presents a bottom-up policy design approach to distributive energy justice using narratives as primary data source. The narratives were collected in slum rehabilitation housing (SRH) in Abuja, Mumbai and Rio de Janeiro to understand the energy cultures associated with poverty. Focus group discussions were conducted to examine the granular details of energy service demand in the slum rehabilitation-built environment. The analysis was performed using a computational framework that uses natural language processing, textual analysis and grounded theory. The results were discussed in two scales. At the aggregated scale it was found that energy injustices were common 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. The Abuja case showed poor 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. 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.

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Publication November 2020
Financial Support Bill and Melinda Gates Foundation, OPP1144