

HOW DOES SLUM REHABILITATION INFLUENCE ENERGY USE IN POVERTY?

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INTRODUCTION

Slum rehabilitation involves moving slum dwellers to vertical apartments with an objective of reducing urban informality. It is a widely used policy tool of slum removal in rapidly urbanizing cities like Mumbai, India. However, if the policies for slum rehabilitation are not designed well, it can rebound and further increase urban poverty [1]. This study investigates the effect of slum rehabilitation on the residential electricity demand.

DATA AND METHOD

Data was collected from 1224 households in slum rehabilitation housing (SRH) of Mumbai. Structural equation modelling (SEM) based on Social Practice Theory (SPT) was used to derive the non-income drivers of electricity demand in these households. Poverty remained a constant source of distress in the SRH, analysing the non-income drivers was necessary.

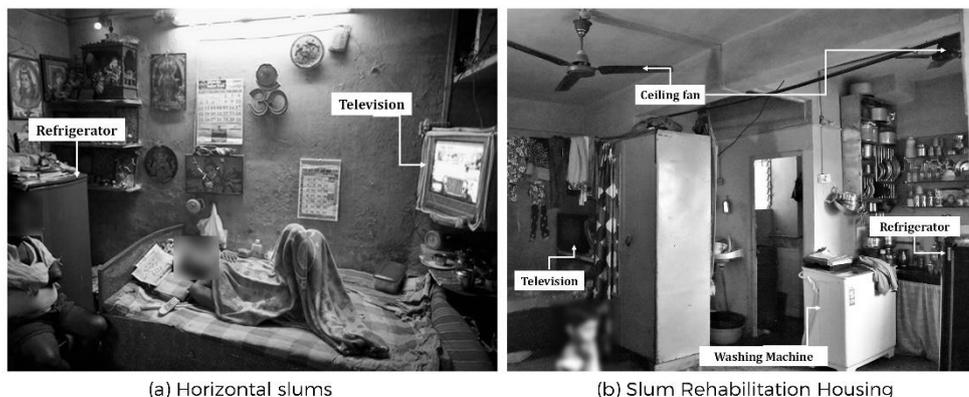
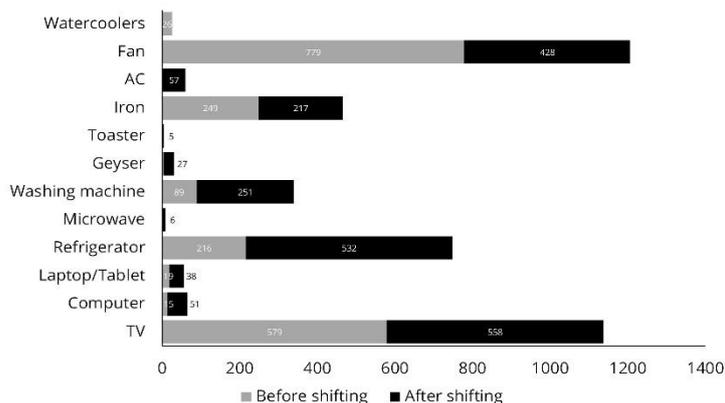


Fig. Appliance ownership increases on moving from horizontal slums to slum rehabilitation housing.

Increase in energy intensive appliance ownership has increased household electricity bills by 40%. This increase in household electricity bills remains a significant cause of distress and discomfort in the surveyed houses (n = 1224, x-axis).



RESULTS & DISCUSSION

- Slum rehabilitation causes household practices to shift indoors. As the current SRH design restricts the occupants to perform these practices in a communal manner. In horizontal slums, household practices revolved around the open spaces.
- Changing household practices positively influences higher appliance ownership as occupants cope loneliness in the SRH.
- Slum rehabilitation increases energy intensive activities through an increase in appliance usage and indoor living. It leads to unaffordable electricity bills for the occupants, pushing them into energy poverty.
- Non-income factors around energy practices influence appliance ownership, like, aspirations, built-environment design and alteration of household practices.

[1] Debnath, R., Bardhan, R., & Sunikka-Blank, M. (2019). Discomfort and distress in slum rehabilitation: Investigating a rebound phenomenon based on a backcasting approach. *Habitat International* doi: 10.1016/j.habitatint.2019.03.010

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