

Annexure

Household wealth index

We constructed a wealth index as a proxy for the economic status of an urban slum household, using Principal Component Analysis (PCA) on a set of household asset ownership indicators, following the method of [Filmer and Pritchett 2001](#), previously used in a CEEW study [Agrawal et al. 2020](#). The index was constructed in R using the [psych](#) package, with the [principal](#) function used to extract the first principal component. The wealth index is constructed using principal component analysis, which places respondents/households on a continuous scale based on the scores of the first principal component. The scale is then ranked, after which it is subdivided into 5 equal strata called wealth quintiles (lowest in the 1st quintile to the highest scorer in the 5th quintile). The relative ranking serves as a better measure of their wealth than self-reported income/expenditure on the survey due to recall biases, under-reporting/over-reporting, etc. involved with the nature of the survey.

The wealth index was computed using 23 indicators spanning household characteristics, asset ownership, and access to amenities:

- **Household characteristics:** settlement type (owned/rented/open spaces), availability of a separate cooking space, and ventilation in the kitchen
- **Space conditioning and appliances:** fan, cooler, AC, room heater, electric iron, immersion rod, water geyser, fridge, diesel generator, inverter
- **Communication and connectivity:** smartphone, basic phone, laptop/computer, cable TV, dish TV, radio, usage of digital payment platforms (UPI)
- **Vehicles:** bicycle, motorcycle/scooter, car

We use the wealth quintiles along with different variables to gauge the relationship between the wealth of the household and the variable:

Fig 1. Subsidy reception is very similar across the quintiles

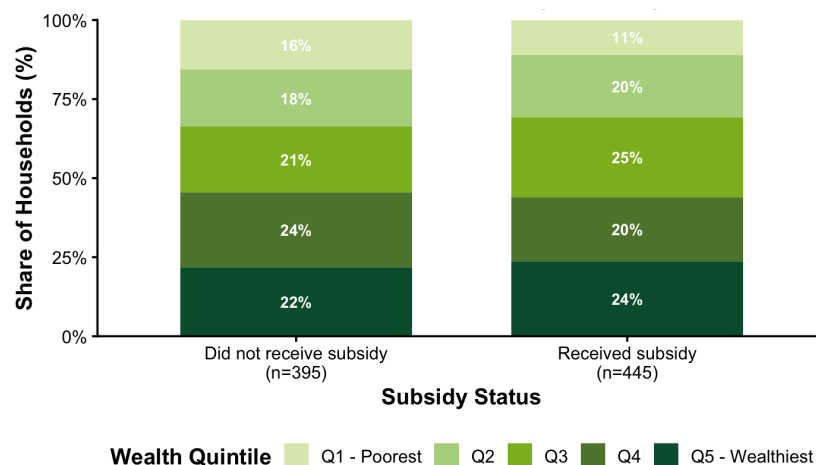


Fig 2. About 62 per cent of households that report the expense of LPG installation as a barrier fall in the bottom 2 quintiles of the asset index

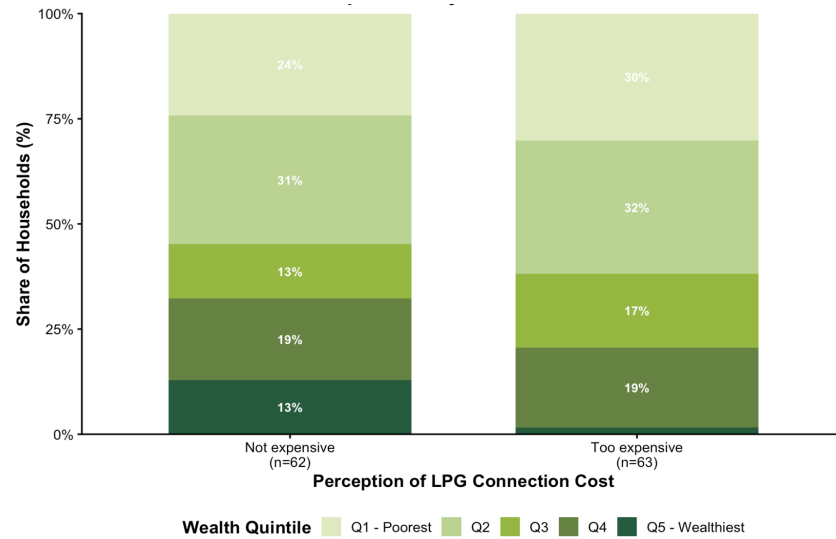


Fig 3. Among those without electricity access, 54 per cent fall into the bottom two wealth quintiles

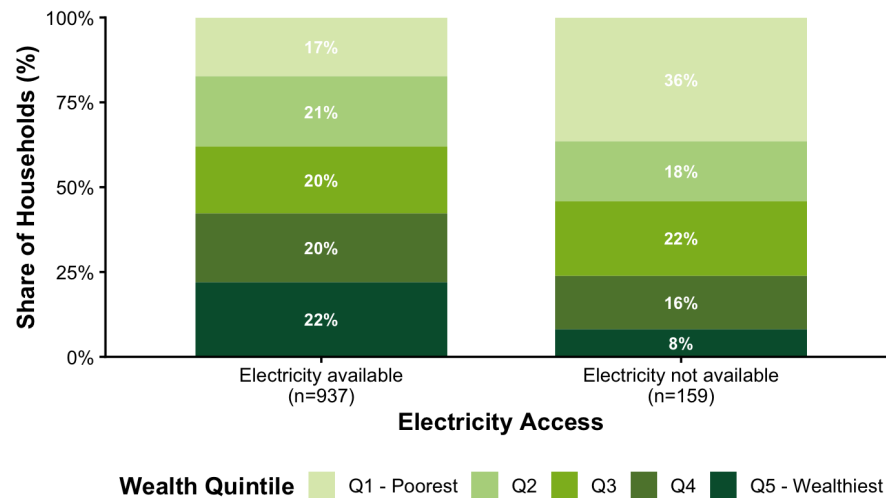


Fig 4. 58 per cent of informally connected users fall in the bottom 2 wealth quintiles

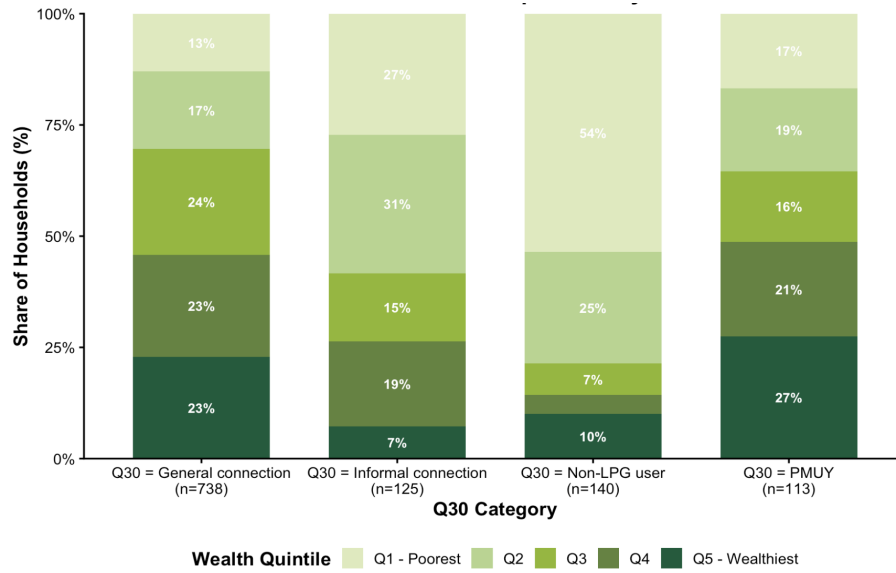
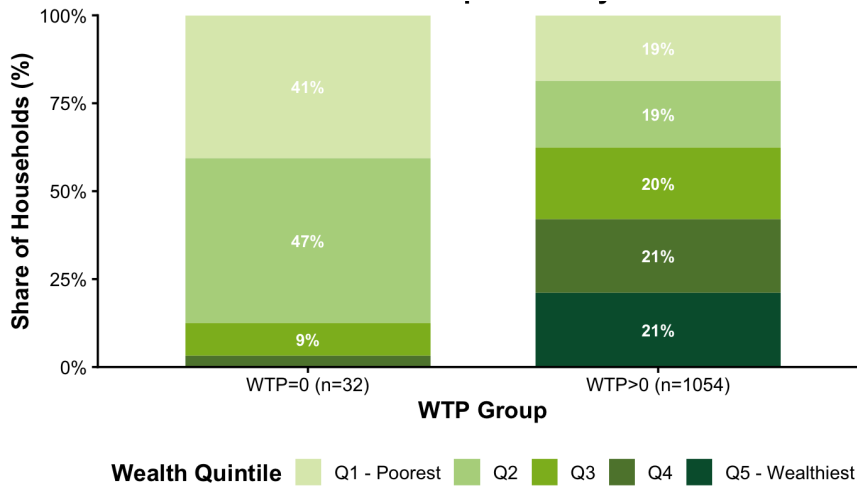


Fig 5: The respondents who are willing to pay INR 0 for exclusive use of LPG are from the poorest strata (88 per cent are in the bottom 2 quintiles according to the asset index)



References

Filmer, Deon, and Lant H Pritchett. 2001. "Estimating Wealth Effects without Expenditure Data-or Tears: An Application to Educational Enrollments in States of India." *Demography* 38 (1): 115– 32.

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