

Mapping the Energy Poverty in Bihar: A Multidimensional Approach

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Introduction

RATIONALE

- Amartya Sen (1999): “Poverty is not just lack of money, it is not having the capability to realize one's full potential as a human being”.
- Income is not an exclusive indicator for poverty estimation due to its non-linear relation with other indicators leading to welfare (Alkire, 2005; Laderchi, 1997; Sharma, 1995).
- India's per capita energy consumption increased from 360 kWh in 1991 to 972 Kwh in 2021.
- Yet one in every three people don't have access to energy.
- Extent of energy poverty is highest in Bihar (Salk, Nathan, and Hari 2018; Gupta, Gupta, and Sarangi 2020)
- In the milieu, this study is an attempt to analyze the Multidimensional energy poverty index (MEPI) for different districts in Bihar.

RESEARCH GAP

No studies has estimated the intra state disparities in prevalence of energy poverty in Bihar.

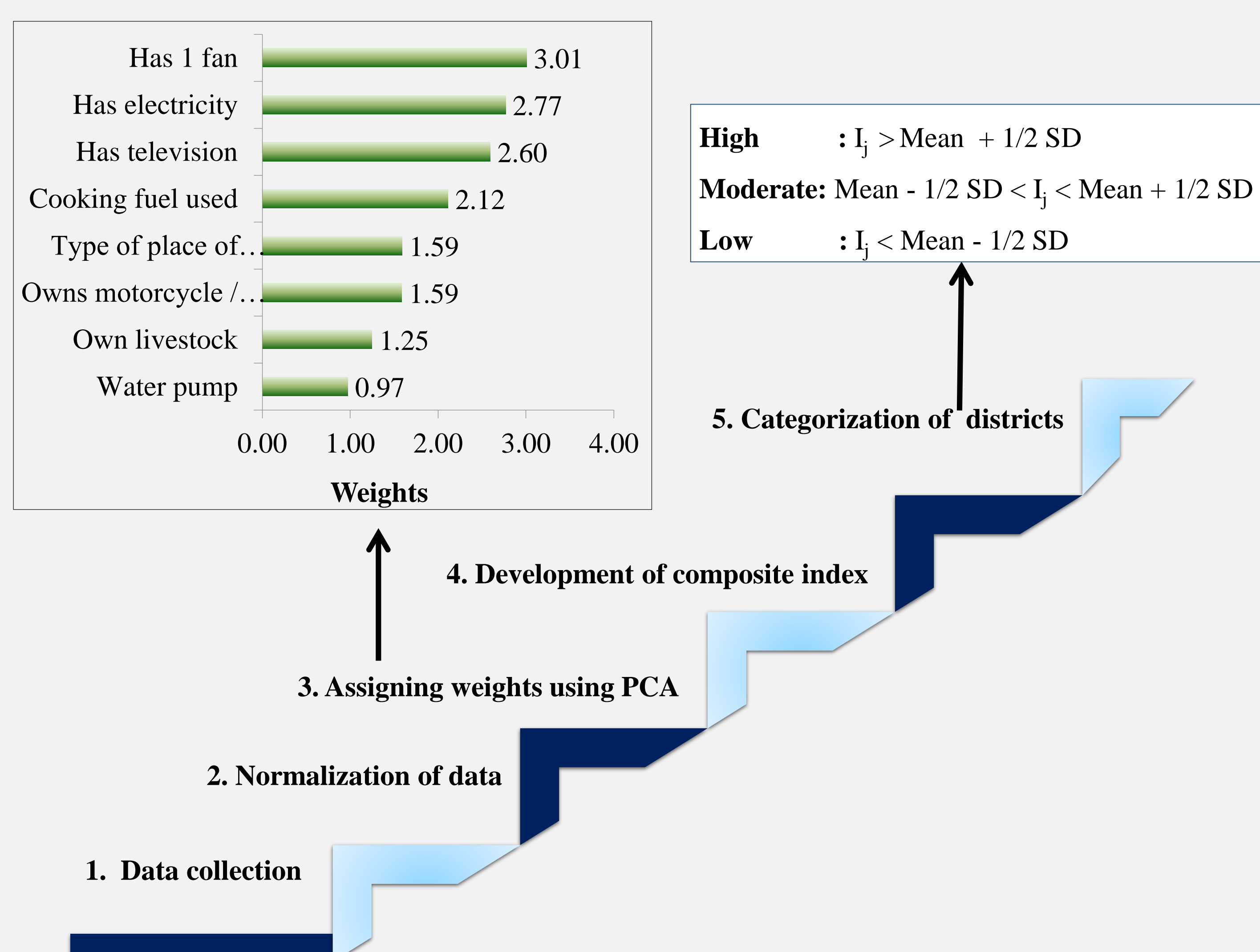
AIM

- To estimate the extent of energy poverty prevailing in districts of Bihar.
- To capture the relevant facets of deprivation.

Methodology

- The multidimensional poverty energy index is calculated for 38 districts of Bihar.
- PCA is statistical tool for transforming the variables to a set of linear combination of the correlated variables.
- Used Demographic and Health survey (DHS) 7 pertaining to year 2015-16 for the same. It provides data on different indicators related to household, women, men and children health across districts of Bihar.
- Dimensions and indicators has been presented in the table.
- The results closer to 0 indicates high level of energy deprivation while closer to 1 indicates lower level of deprivation.

Dimension	Indicators	Deprived if
Type of place	Rural or urban	Rural=1 or urban =0
Cooking	Cooking fuel used	Using solid fuels and Kerosene
Lighting	Electricity	No
Electricity for productive purpose (in Agriculture)	Water pump	No
	Livestock	No
	Television/	No
Entertainment appliance	Radio	No
	Fan	No
Transportation	has motorcycle / scooter	No



Results and Discussion

Fig 2: Multidimensional energy poverty deprivation mapping in the districts of Bihar

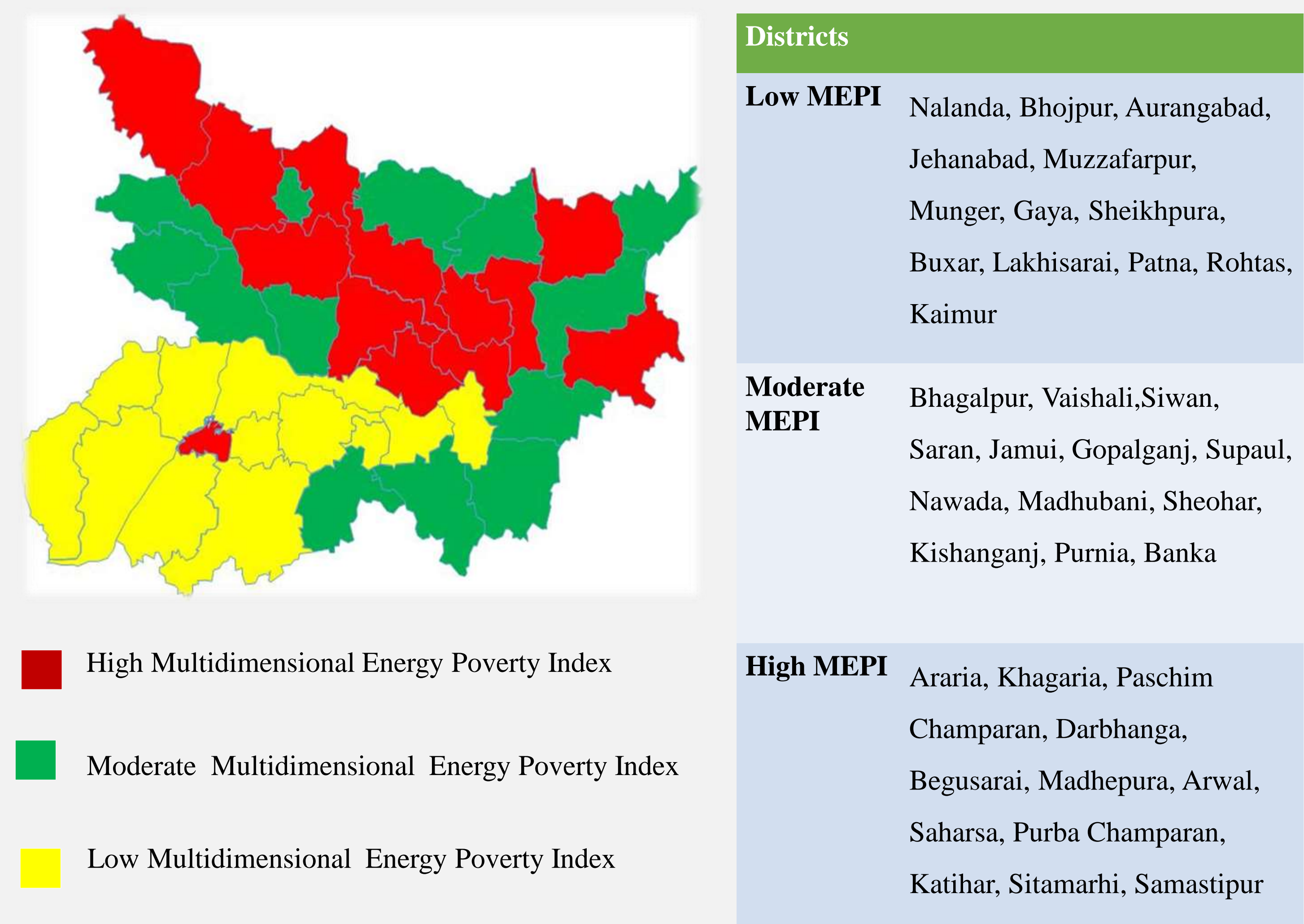
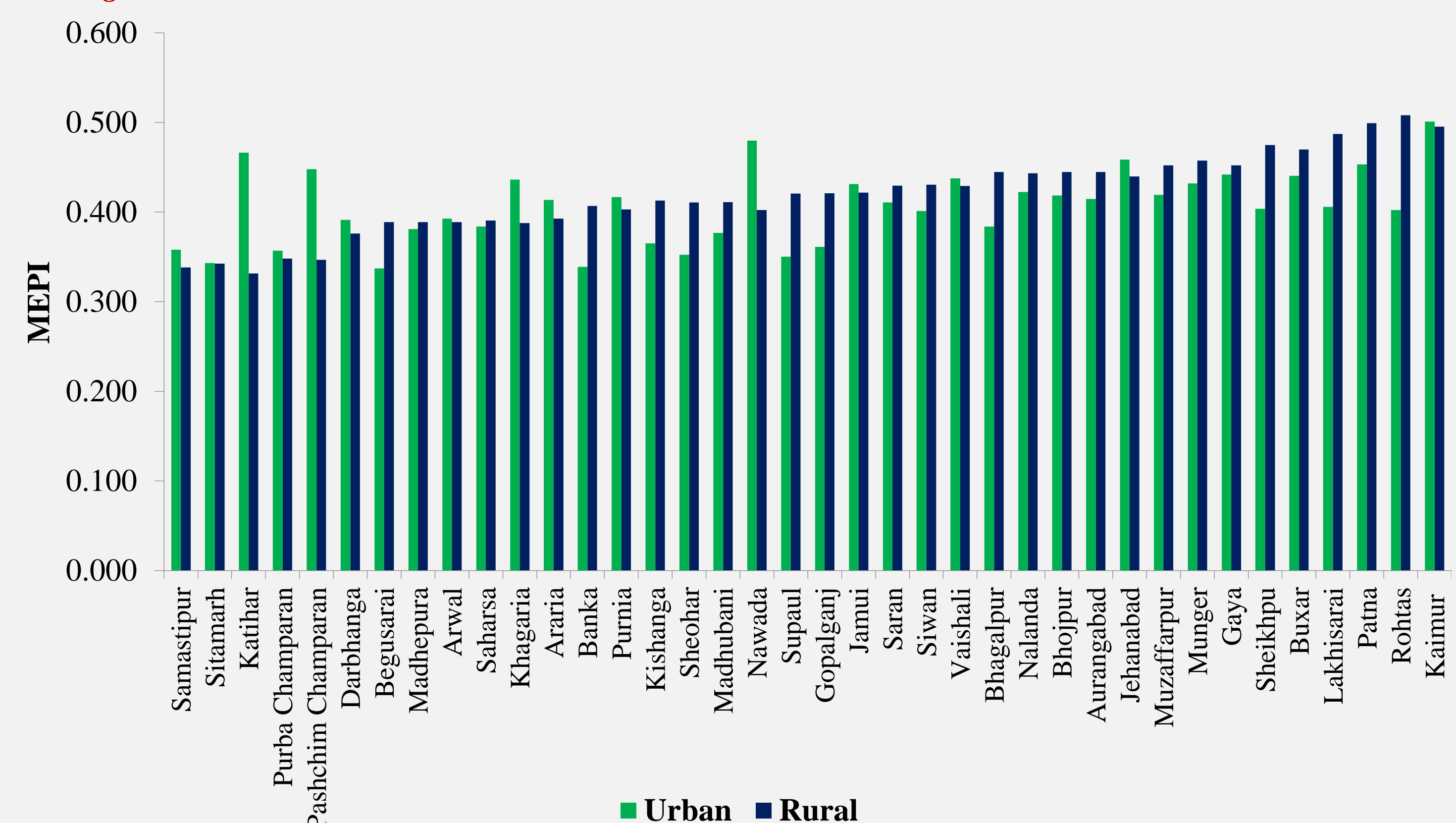


Fig 3: Rural-urban divide in MEPI



Conclusion

- Multidimensional energy poverty index was very high across Bihar. It was highest in Kaimur (0.34) and least in Samastipur (0.50). The rural urban divide is also very high in some districts (Graph presented above).
- Pandemic has added 218 million more people into poverty line (Ram and Yadav, 2021), therefore, inability to access electricity and refilling of the gases (LPG) will increase. Leading to excessive use of solid fuels leading to more indoor pollution and respiration related irritation and child mortality.
- Majority are deprived of electricity, cooking fuels, communication appliances. Lack of access to energy reflects the incapability's of the households.
- District wise disintegrated policies are required to address the prevailing rate of poverty.
- Decentralization of electricity can be an initiative.
- Incentives and information transfer for changing the orientation of the common masses can be a way forward

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