WHAT CAN BE DONE TO ELIMINATE URBAN-RURAL DIVIDES IN ELECTRIFICATION RATES TO ESTABLISH EQUITABLE ENERGY ACCESSIBILITY ACROSS SOUTH ASIA?

Muntasir Murshed, North South University, Bangladesh, +8801674873708, murshed.northsouth@gmail.com
A.K.M. Atiqur Rahman, North South University, Bangladesh, +8801726134173, akm.atiqur@northsouth.edu

Overview

In quest of achieving the 2030 Sustainable Development Goals (SDG) agenda of the United Nations, reducing urban-rural divides in electrification rates is deemed important for sustainably developing socioeconomic and environmental indicators worldwide (Noumba and Nguea 2023). Hence, underscoring the necessity of eliminating such divides, which is connected with 9 out of the 17 SDGs, this study appraises how different macroeconomic variables influence the discrepancies concerning urban and rural rates of electrification in seven South Asian nations during the 2000-2022 period. The justification of choosing South Asia as the case study is based on the estimate of around 32.9 million people from this region having no electricity access in 2022; among these, about 24.4 million resided in rural areas. More importantly, in most part of the abovementioned period, urban electrification rates in the selected South Asian nations exceeded the corresponding rural electrification rates (World Bank 2024). Therefore, these statistics not only certify the existence of the urban-rural divide in electrification rates but also point out that national electrification policies implemented across South Asia have predominantly worked in favor of electrifying urban communities; thus, leaving rural communities lagging behind their urban counterparts in respect of electricity accessibility. Consequently, it may be presumed that socioeconomic and environmental development that took place in rural areas across this region have remained below par compared with such development in urban areas. Hence, in the spirit of 2030 SDG agenda, this study is of great interest for South Asian governments to ensure universal electricity access within respective economies so that no one is left deprived from receiving socioeconomic and environmental benefits derived from improvements in electricity access rates. Furthermore, this study is also relevant for designing geographically-inclusive domestic policies for eradication of energy poverty and establishment of energy access equitability across South Asia.

Methods

The estimation procedure involves six stages: (a) cross-sectional dependency analysis, (b) slope heterogeneity analysis, (c) unit root analysis, (d) cointegration analysis, (e) regression analysis, (f) causality analysis.

Results

Based on findings, it is seen that more formal credit accessibility, better corruption controlling capacities, FDI attraction, and higher inflation rate reduce urban-rural divides in electrification rates while more receipts of foreign remittance and larger differences between urban and rural population growth rates widen the divides further. Moreover, the findings verify that while inflation is the only macroeconomic factor responsible for boosting urban electrification rates, rural electrification rates are influenced by all above-mentioned factors. Accordingly policies are recommended

Conclusions

Underscoring the necessity of eliminating the urban-rural divide in electrification rates for achieving several of the SDG (including SDG-1, SDG-2, SDG-3, SDG-4, SDG-7, SDG-8, SDG-9, SDG-10, and SDG-13), this study appraised how different macroeconomic variables influence this electrification divide in seven South Asian nations during the 2000-2022 period. In this regard, the “CD, HSC, and endogeneity-robust” panel data estimators have been utilized for identifying the macroeconomic determinants of (i) the gaps between urban and rural electrification rates, (ii) urban electrification rates, and (iii) rural electrification rates in the concerned South Asian nations. Overall, the results endorsed that more formal credit accessibility, better corruption controlling capacities, FDI attraction, and

inflation reduce urban-rural electrification divides while more receipts of foreign remittance and larger gaps between urban and rural population growth rates were found responsible for widening the urban-rural electrification rate divide further. Further, the findings showed that while inflation is the only macroeconomic factor responsible for boosting urban electrification rate, rural electrification rates in the concerned South Asian countries are influenced by all macroeconomic factor considered. Precisely, the results affirmed that rural electrification rates are positively influenced by corruption control, FDI attraction, and rising inflationary pressures but negatively influenced by more formal credit access, foreign remittance receipts, and rising disparity between urban and rural population growth rates. Therefore, policymakers in South Asia should take note of the above findings when designing action plans for eliminating discrepancies between urban and rural electrification rates.

References

Noumba, I., & Nguea, S. M. (2023). Assessing the role of globalization for universal electricity access. International Economics, 174, 180-195.

World Bank. (2024). World Development Indicators. Available at https://databank.worldbank.org/source/world-development-indicators