

THE IMPACT OF SELECTED SOCIO-ECONOMIC FACTORS ON PER CAPITA ELECTRICITY CONSUMPTION IN SRI LANKA (1977-2021)

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Electricity consumption measurement is an essential indicator for assessing a country's energy usage, including its economic advancement and the way of life adopted by its population. In achieving sustainable economic development and mitigating energy security and environmental issues, it is vital to recognise the complex interdependencies among economic, demographic, and energy-related factors. This study investigates the specific correlation among the Consumer Price Index, working-age population, economic growth, and per capita electricity power consumption in Sri Lanka from 1977 to 2021. Therefore, after identifying the mixed integrated stationarity of selected variables, the Auto Regressive Distributed Lag (ARDL) model was employed to determine the long-run and short-run relationship. The diagnostic tests confirmed that the estimated parameters and model (1,1,0,1) are stable in the long run. This study used the natural logarithm of Per capita electricity power consumption (Kwh) (PCEC) as the dependent variable and Consumer Price index (CPI) annual percentage, working age population (15-65 age workforce- POP), and Gross domestic production (GDP) in current prices as main independent variables. The ARDL bound test confirmed that there were long-run relationships among variables. According to the ARDL, short-run and long-run results show that POP and GDP positively and significantly impacted PCEC, while CPI negatively and significantly impacted PCEC in Sri Lanka. The ARDL Error Correction model error term shows a negative and highly significant value of -0.2159, suggesting that D(LNGDP) and D(LNCPI), deviate from their long-term equilibrium; about 21.59% of this deviation is corrected in the short-term. According to these results, when CPI increases, it will reduce the country's per capita electricity power consumption and lower the country's production level. Therefore, the government should focus on maintaining a lower inflation level within the economy and improving and innovating new electricity generation projects such as wind farms and solar power to gain and enhance economic growth with active labour force participation. Additionally, the findings demonstrate the capacity to forecast per capita electricity consumption by considering the working-age population's size in an economy. This information is valuable for policy formulation regarding electricity consumption.

Keywords: ARDL model, Economic growth, Electricity consumption, Inflation, Labour force