

Urbanization and Income Inequality in Thailand

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Abstract : This paper aims to examine the relationship between urbanization and income inequality in Thailand during the period 2002–2020. Using a panel of data for 76 provinces collected from Thailand's National Statistical Office (Labor Force Survey: LFS), as well as geospatial data from the U.S. Air Force Defense Meteorological Satellite Program (DMSP) and the Visible Infrared Imaging Radiometer Suite Day/Night band (VIIRS-DNB) satellite for nineteen selected years. This paper employs two different definitions to identify urban areas: 1) Urban areas defined by Thailand's National Statistical Office (Labor Force Survey: LFS), and 2) Urban areas estimated using nighttime light data from the DMSP and VIIRS-DNB satellite. The second method includes two sub-categories: 2.1) Determining urban areas by calculating nighttime light density with a population density of 300 people per square kilometer, and 2.2) Calculating urban areas based on nighttime light density corresponding to a population density of 1,500 people per square kilometer. The empirical analysis based on Ordinary Least Squares (OLS), fixed effects, and random effects models reveals a consistent U-shaped relationship between income inequality and urbanization. The findings from the econometric analysis demonstrate that urbanization or population density has a significant and negative impact on income inequality. Moreover, the square of urbanization shows a statistically significant positive impact on income inequality. Additionally, there is a negative association between logarithmically transformed income and income inequality. This paper also proposes the inclusion of satellite imagery, geospatial data, and spatial econometric techniques in future studies to conduct quantitative analysis of spatial relationships.

Keywords : income inequality, nighttime light, population density, Thailand, urbanization

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