

# **Non-banking sector development effect on economic growth. A nighttime light data approach**

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## **Abstract**

This paper uses nighttime light (NTL) data to measure the nexus of the non-banking sector, particularly insurance, and economic growth in South Africa. We hypothesize that insurance sector growth positively propels economic growth due to its economic growth-supportive traits like investment protection and optimal risk mitigation. We also claim that nighttime light data is a better economic measure than gross domestic product (GDP). We used weighted regressions to measure the relationships between nighttime light data, GDP, and insurance sector development. We used time series South African GDP data collected from the World Bank for the period running from 2000 to 2018, and the nighttime lights data from the National Geophysical Data Centre (NGDC) in partnership with the National Oceanic and Atmospheric Administration (NOAA). From the models fitted and the reported BIC, AIC, and likelihood ratios, the insurance sector proved to have more predictive power on economic development in South Africa, and radiance light explained economic growth better than GDP and GDP/Capita. We concluded that nighttime data is a better proxy for economic growth than GDP/capita in emerging economies like South Africa, where secondary data needs to be more robust and sometimes inflated. The findings will guide researchers and policymakers on what drives economic development and what policies to put in place. It would be interesting to extend the current study to other sectors, such as microfinance and mutual and hedge funds.

**Keywords:** Nighttime lights data, GDP/capita, radiance light, saturated light, economic growth, insurance sector, insurance premium density