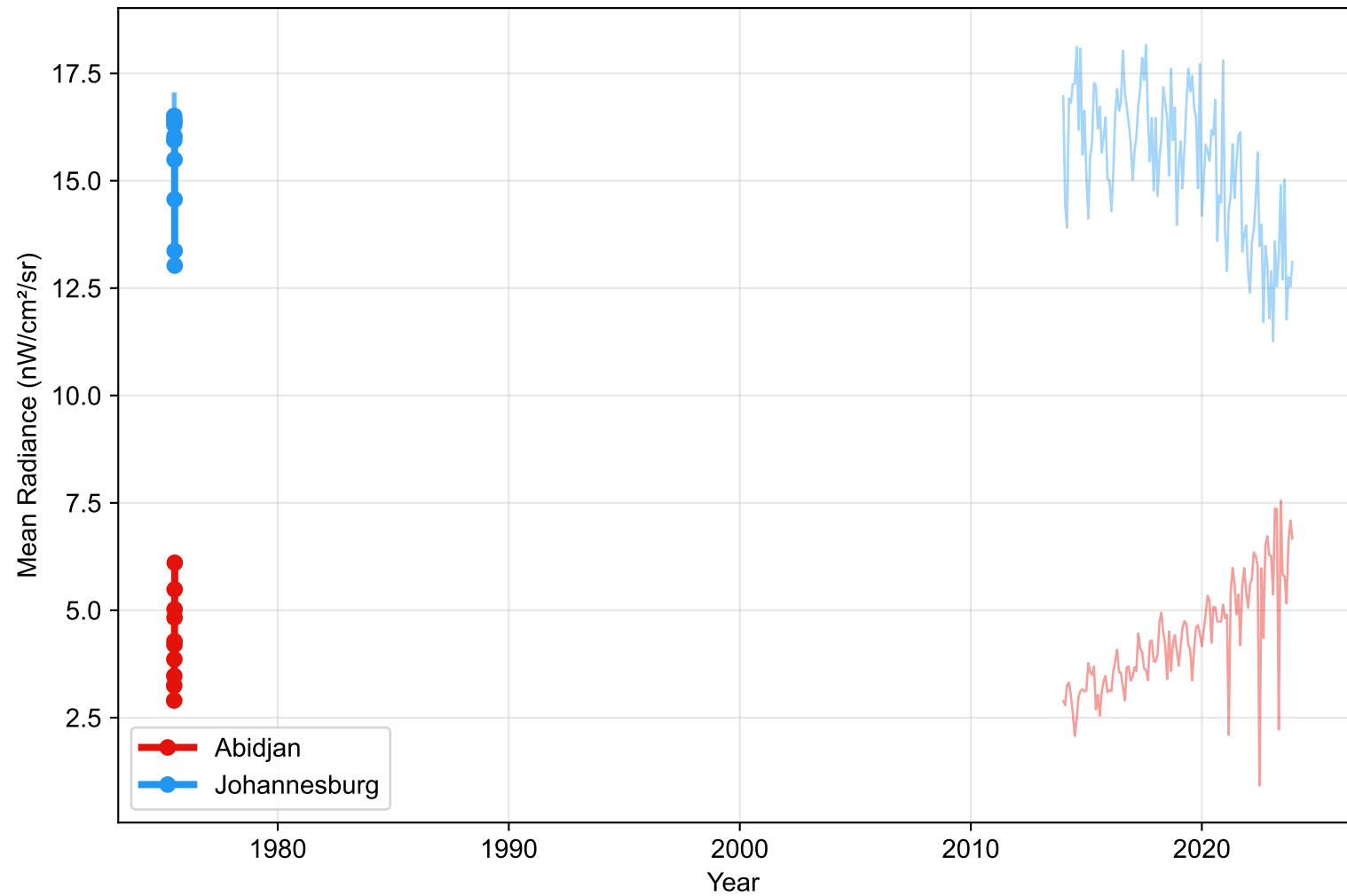
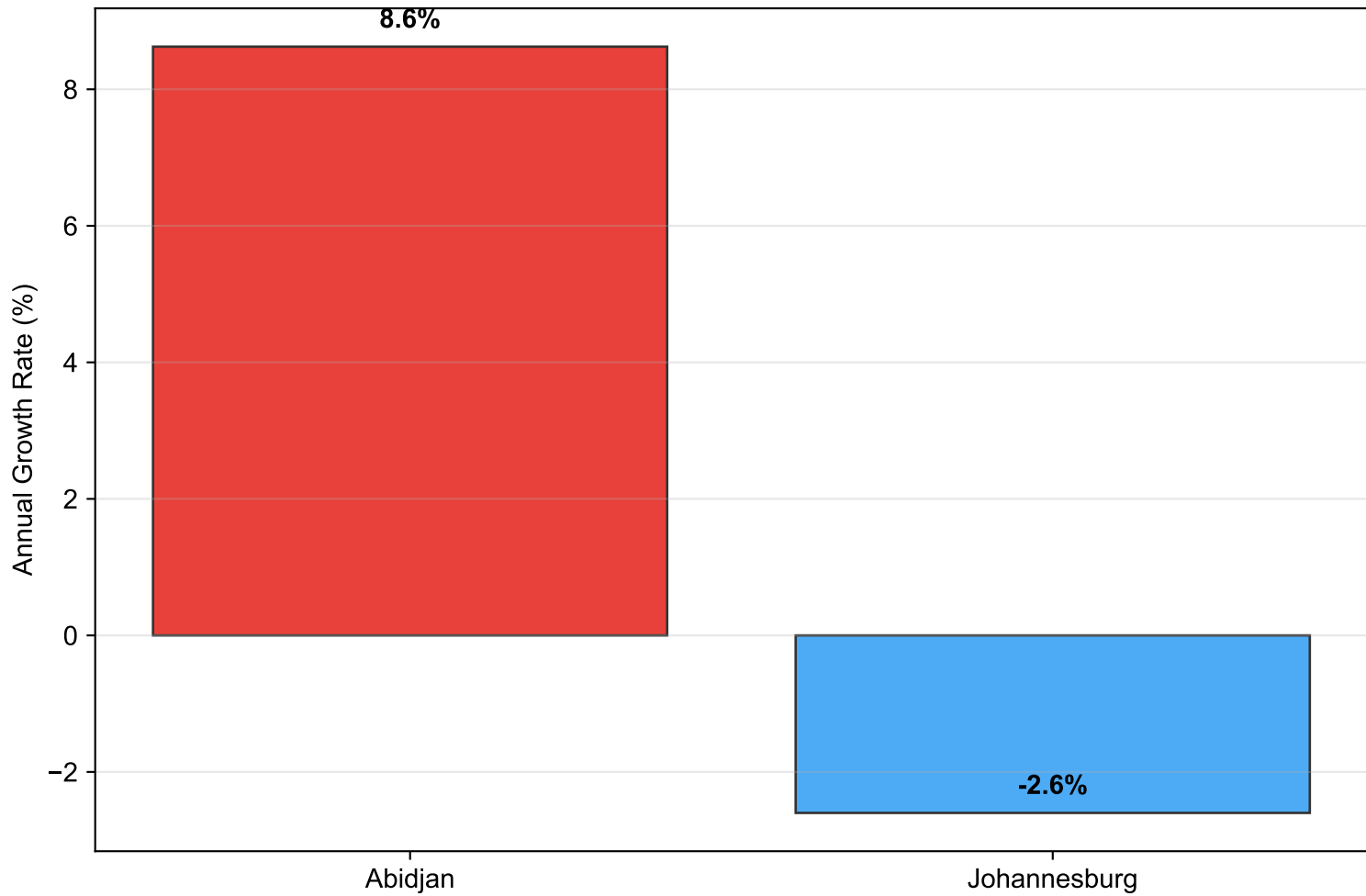


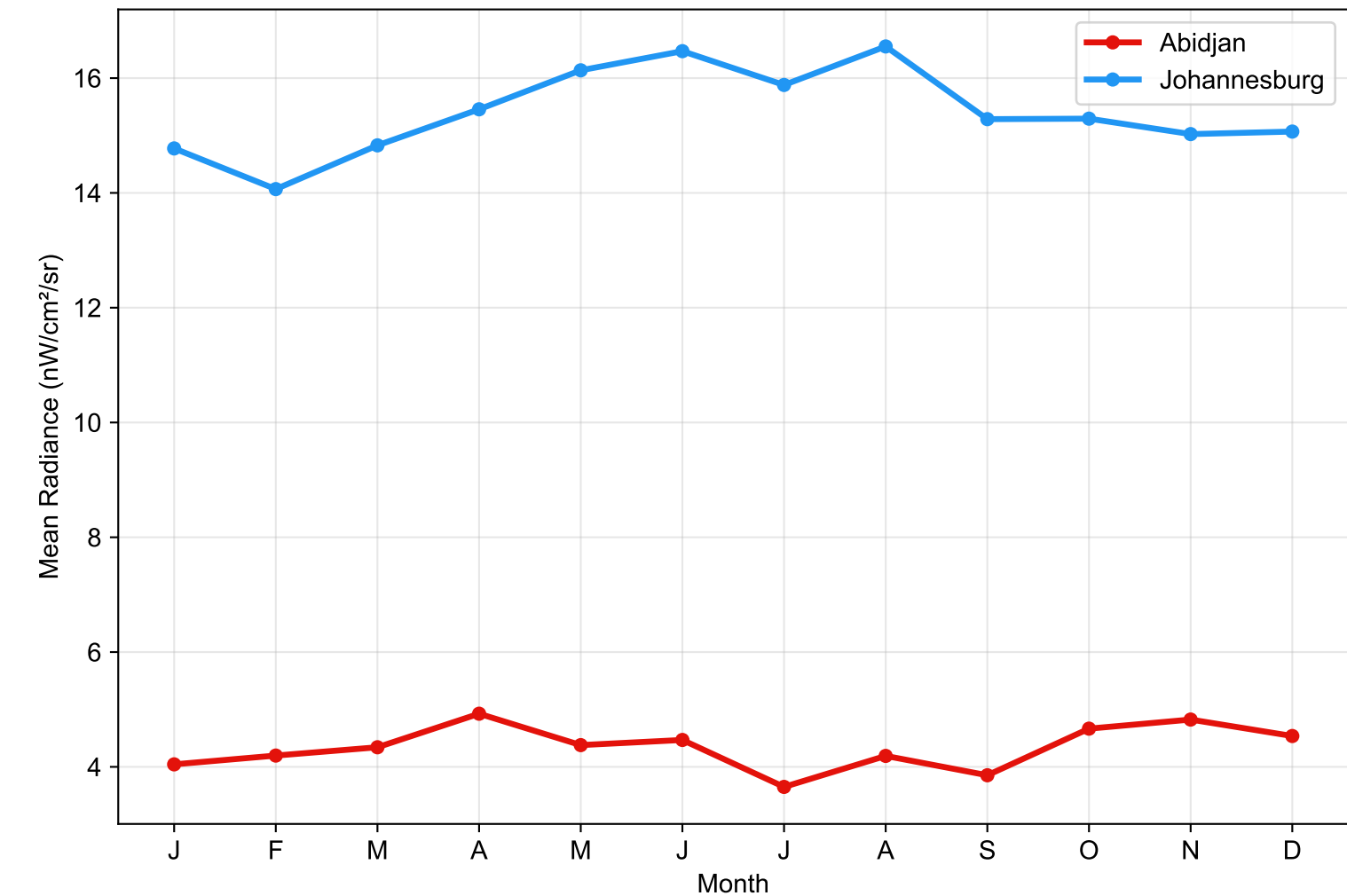
REAL Satellite Data: Nighttime Light Intensity
VIIRS DNB Monthly Composites (2012-2023)



Annual Urbanization Growth Rate
(VIIRS Satellite Data)



Seasonal Light Patterns
(Multi-year Satellite Average)



SATELLITE-CONFIRMED URBANIZATION
Google Earth Engine + VIIRS Data

ABIDJAN (Côte d'Ivoire):

- 9,162 study participants
- Period: 2014-2023
- Light increase: +110.5%
- Peak: 7.56 nW/cm²/sr
- Observations: 120 monthly

JOHANNESBURG (South Africa):

- 11,800 study participants
- Period: 2014-2023
- Light increase: -21.1%
- Peak: 18.16 nW/cm²/sr
- Observations: 120 monthly

EVIDENCE FOR HEALTH STUDIES:

- ✓ Real-time environmental change
- ✓ Quantified urbanization rates
- ✓ Infrastructure development
- ✓ Population density changes
- ✓ Economic activity growth

Data Source: NOAA VIIRS DNB
Resolution: 500m, Monthly
Quality: Weather-filtered