Poverty Prediction through Satellite Imagery

Project Domain

An attempt to tackle global issues through Geospatial domain & Machine learning

- *UN's one of the topmost goals is to reduce poverty by 2030.*
- *This tool is an attempt to help them achieve this goal.*
- *Using Machine learning & analysis of geospatial data, we could predict poverty through satellite imagery.*

Problem

- *Most countries don't collect much data.*

- *scaling up traditional survey based data collection methods are expensive.*

The Solution

Predicting poverty through data sources like satellite imagery is comparatively inexpensive.

Upload the satellite imagery to the site

The model will analyse the image for nighttime luminosity features

The model predicts if the analysed area comes under poverty region

Data Sourcing

- *Measure of poverty - Average wealth and asset index of each cluster.*
- *“Ground truth” - DHS Survey datasets.*
- *Nighttime Satellite imagery - NOAA*
- *Daytime Satellite imagery - Google Static Maps API.*

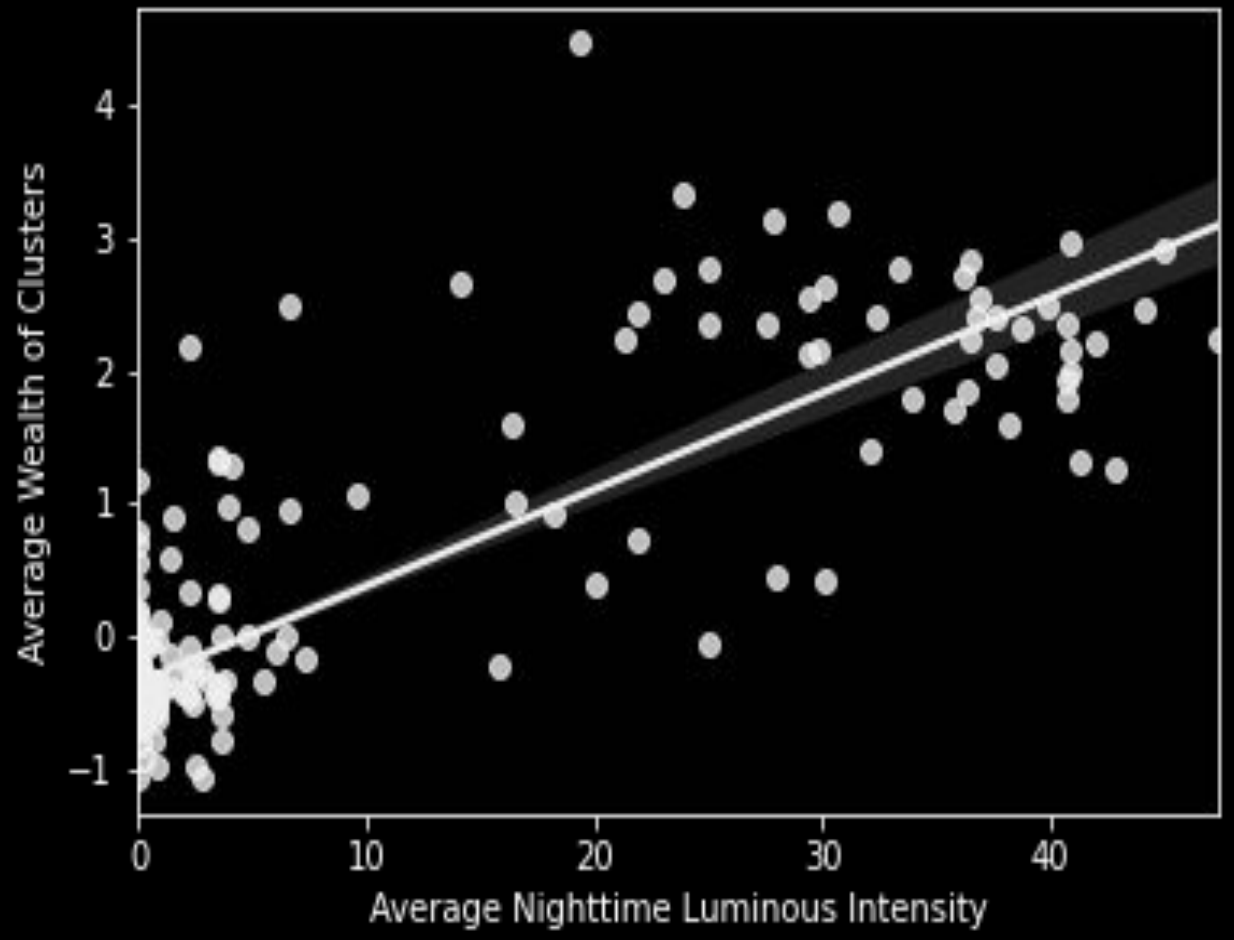
Nightlights Imagery Analysis

Features

- *DHS Survey - GPS, average wealth and asset index of clusters.*
- *Luminous intensity of clusters - Nighttime satellite imagery*

Findings

Average nighttime luminosity is high for areas having a high average wealth



Findings

- *Areas having a higher asset index (4.0 or more) have a bright luminous intensity.*
- *An exception to this are the areas having asset index of 4.5. This is because areas being these wealthy are few as compared to areas 3.0 or below.*