

Identification of Poverty Areas Through Satellite Imagery in Buraydah City in Al Qassim Region of Saudi Arabia.

By: Amal A. Alfawzan

April 2019

Abstract

Buraydah city is the largest city of Qassim region in Saudi Arabia. Within Buraydah city, there exist areas that provide different levels of standard of living. So, the research hypothesizes that there are poor areas within the city, where poverty is one of the most pressing issues facing the residents. This research aims to identify the poverty areas in its districts through satellite imagery, by using a Landsat 8 Operational Land Imager (OLI) of 2019. In addition, segmentation and classification tools in a Geographic Information System (GIS) are applied to distinguish features between poor and richer areas. Training samples have been created to utilize in Maximum Likelihood, Support Vector Machine, and Random Trees classifiers. The result is expected to show poverty areas are distinguishable using Landsat-8 imagery, which can be recognize through building size, roads material, and construction density. The research will help officials, charities, decision-makers, and planners to focus their development efforts on these areas. Also, the results will be supporting the new vision 2030 of Saudi Arabia . The research will also encourage researchers to take advantages of satellite images and spatial analysis technique for other applications.

Keywords: Poverty, Satellite Imagery, OLI, GIS, Segmentation tools, Classification tools.