Preface:

In Mizoram, the majority of forest fires are geographically concentrated in particular locations and are closely tied to human activity. The R-module Generalized Linear Mixed model (GLMM), which can take into account autocorrelation of spatial data, is used to perform spatial regression analysis on these site-specific properties of forest fires. With and without autocorrelation of spatial data, we identify the quantitative impact of topography, human availability, and forest cover. The explanatory variables for each of these characteristics were created using a GIS based procedure under the presumption of slope, elevation, aspect, density of population, proximity from road, and forest cover were related to the prevention of forest fires. Forest fire occurrence is influenced by numerous factors. According to earlier research, topographical (elevation, slope, and aspect), vegetation types, and weather all play a substantial role in the frequency of forest fires. It has been suggested that the fuel's moisture content affects the likelihood of forest fires. There have also been reports linking human habitation and population density to forest fires. As a result, new methods are needed, and addressing spatial autocorrelation of count data is becoming crucial to ecology and forestry. For point-based data, geostatistical approaches are well known for analyzing spatial autocorrelation, and hybrid techniques like regression-kriging, which combines kriging and ordinary least squares regression, have lately gained popularity. Numerous Generalized Linear Mixed Models (GLMM) based on various hypotheses have been proposed in statistical research to adjust for spatial autocorrelation. In addition to forest fire research, these techniques are widely applied in the domains of epidemiological, sociological geography, & remote sensing. To lessen the potential effects of wildfires on forests resources, forest fire risk regions should be identified, and the necessary safety actions should be taken there. Some animals perish in wildfires, but the deaths have little bearing on the species overall. However, in some instances, the mortality rate has negatively impacted biodiversity and placed it in a precarious position. We all have a moral obligation to improve a region with as much biodiversity as Mizoram, yet the continuing fires are progressively eliminating all opportunities. it will make them regret it later.