Title:	Statistical Modelling and Analyses of Epidemiological Data of Malaria in India
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Abstract:	This work is aimed at statistical modelling and analysing the transmission and preva- lence of malaria and their relationship with climate, specifically in the Indian subcon- tinent. To that end, this work entails the implementation of various methodologies such as regression analysis of time series data, spatial analysis of malaria prevalence and exploratory analysis of historical data for deriving important insights about the relationship between different environmental and demographic factors and malaria in India. The regression modelling of malaria prevalence for the city of Mangalore reveals that it is strongly dependent upon temperature and rainfall. Also, the de- pendence upon lagged temperature and rainfall has been found to be particularly strong. The spatial analysis of malaria incidence over several years in the northern states of India reveals that the influence of temperature change on increasing malaria prevalence at high altitude regions is insignificant. This is correlated with the effect of climate change and malaria in this region. The exploratory analysis of the his- torical epidemiological malaria data provides important insights regarding the trends of malaria prevalence in the states of India for over 32 years. Finally, these insights have been employed for classifying the states into low and high-risk regions with a prospective goal of guiding future malaria control policies for effective eradication of the disease.
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