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Topic of Research: Impact of Air Pollution on Human Health in NCT Delhi

<u>Findings</u>

In this study, an effort was made to analyze the spatio-temporal variation of air pollution, determinants and impact of air pollution on human health. This work provides a critical insight into the adverse impact of air pollution on environment, human health and economy. It will be helpful to other researchers, scholars, academicians, health workers investigating the risks associated with air pollutants, and its control strategies. It also examines the policies and initiatives of state and central government, and provides some suggestion, for its abatement.

An intensive literature survey was done to identify the research gaps, and to frame the basic structure of the present study. The following hypothesis were tested in the study of air pollution in NCT Delhi, firstly, is its spatio-temporal variation, and secondly, is its positive relation with the prevalence of diseases in NCT Delhi.

To test the above mentioned hypothesis the study used primary and secondary data, and the former was collected through field survey conducted in all districts of Delhi using a pre-tested, semi-structured, interviewer-administered questionnaire. The secondary data sources included the Census of India (2011, 2001 and 1991), Delhi statistical handbook 2017, Economic survey of Delhi, Annual reports of CPCB and other international organizations such as World Bank, WHO, IMF etc.

The Study used various methods to accomplish the objectives such as trend analysis (least square method), IDW in GIS environment, exceedance factor, air pollution index, descriptive statistics such as skewness and others, pearson's correlation and chi-square test.

The thesis is organized into five chapters. Chapter one deals with the overview of the study, conceptual framework, historical background, significance, objectives, research questions,

literature review, study area, database and methodology. Chapter two examines the spatio-temporal analysis of air pollution in Delhi, from 1991 to 2021. Analysis has been done using Exceedance Factor and Air Pollution Index. Exceedance Factor is used to find the status of individual pollutant, while API showed the cumulative impact of all the three pollutants, namely, SO_2, NO_2 and SPM. Spatial maps were made using GIS, to show variation in concentration of pollutants in NCT-Delhi.

Chapter three deals with the determinants of air pollution in Delhi, which included socio-demographic, health profile, diseases pattern and perception of air pollution and subsequent behavior through primary survey in its eleven districts.

Chapter four analyzes the impact of air pollution on human health by evaluating association between air pollutants, correlation between air pollutants and prevalence of diseases, relation between socio-economic, demographic conditions and air pollution.

Chapter five comprises of conclusion and suggestions.

It is concluded that air pollution is rising at a very fast pace, and encompassing the whole city, and taking a heavy toll on the health of people as it causes high rate of morbidity and mortality. Therefore, immediate and well planned action is the need of hour to combat this silent killer.