

ANALYSIS OF MAJOR AIR POLLUTANT OF AN INDUSTRIAL AREA IN COIMBATORE CITY USING FUZZY TOPSIS

A. Sahaya Sudha¹ & V. Ruby²

¹Assistant Professor, Department of Mathematics, Nirmala College for Women, Coimbatore, Tamil Nadu, India

²Assistant Professor, Department of Mathematics, Rathinam College of Arts and Science, Coimbatore, Tamil Nadu, India

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ABSTRACT

The quality of air was determined based on National Ambient Air Quality Standards (NQAAS). According to the Comprehensive Environmental Pollution Index, Kurichi Industrial cluster in Coimbatore district has been identified as one of the critically polluted area. The main objective of this paper is to analyze the major air pollutant in this Industrial Cluster. The multi-criteria decision-making method is applied for assessment of air pollutant of Kurichi in Coimbatore city.

KEYWORDS: Multi-Criteria Decision Making, Air Pollutant, TOPSIS, Fuzzy TOPSIS, Triangular Fuzzy Numbers

of X is defined as where is called the membership function which maps each element of X to a value between 0 and 1 of the universe of discourse X is called a normal fuzzy set implying that “. of the universe of discourse if and only if for all in X, “. is a convex normalized fuzzy set on the real line R such that: is piecewise continuous can be defined by a trip shown below is defined and be two triangular fuzzy numbers parameterized by the triplet and respectively, “ and be two triangular fuzzy numbers, then the vertex method is defined to calculate the distance between them, “. are two triangular fuzzy numbers, then the distance of from is achieved by following relation: , the crisp number 0 equals following value:” are alternatives among which decision makers have to choose, is fuzzy rating of with respect to criterion . is calculated as: of the factor becomes, factor can be defined by the following equation: is the weight if the criterion, and . with respect to criteriaincalled . and , $j=1,2,\dots,m$. with respect to is defined as: indicates a good. The best alternative is the one with the greatest relative closeness to the ideal solution. Kurichi area are and the criteria are Monsoon, Summer, , , , , .

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. which mean the major pollutant in Kurichi (Industrial) area is