

ROUGH SET ANALYSIS APPLIED TO THE STUDY OF AIR POLLUTANTS IN URBAN AREAS

M.T. Clasadonte¹, A. Matarazzo¹, N. Pappalardo², F. Collura³, G. Cortina³, F.P. Toscano³, **A. Zerbo**¹

¹*Department of Economics and Territory, Marketable Goods Section, University of Catania, Catania, Italy*

²*Department of Agricultural Engineering, Faculty of Agriculture, University of Catania, Catania, Italy*

³*Provincia Regionale Caltanissetta, Assessorato Territory Ed Ecology, Caltanissetta, Italy*

This work shows the application of an innovative technique of quantitative analysis, the Rough Set Analysis, to the study of carbon monoxide (CO) and thin powders (PTS) concentrations in different areas of the town of Gela (Caltanissetta, Sicily, Italy). Apart from analysing the season variations in the considered pollutants emissions, the application of the Rough Sets methodology allows us to explain the air pollution caused by urban traffic, in terms of relationships between the above-mentioned substances and the meteorological substances which are mainly responsible for the their concentration. Moreover, such technique shows the results in terms of “if..., then...” sentences, which are easily comprehensible and lead to the making of preventive choices. The great flexibility of this methodology makes it suitable for useful applications in the future. It can also help to devise actions which aim at the improvement of the urban air quality management.