Proposed Area and Topic of Research

Name of the Candidate : SALINI C G

Field of Research : REGRESSION ANALYSIS

PROPOSED TITLE OF THE WORK:

ESTIMATION OF REGRESSION COEFFICIENTS IN THE PRESENCE OF SPATIALLY AUTO CORRELATED ERROR TERMS.

Statistics is the science of collecting, analysing, presenting, and interpreting data. Governmental needs for census data as well as information about a variety of economic activities provided much of the early impulsion for the field of statistics. Currently the need to turn the large amounts of data available in many applied fields into useful information has stimulated both theoretical and practical developments in statistics. Possible research areas in statistics are Bayesian Computation, Monte Carlo methods, Statistical Machine Learning, High dimensional Bayesian statistics and Bayesian nonparametrics, asymptotic theory, model selection, Bayesian tests and Bayesian computation. Latest research area in statistics are animal and plant demography, astrostatistics and model calibration, bioinformatics, biostatistics, data Science, decision analysis and support, ecological statistics, econometric modelling.

Statistics plays a vital role in every field of human activity. Statistics helps in determining the existing position of per capita income, unemployment, population growth rates, housing, schooling medical facilities etc in a country.

Regression coefficients are estimates of the unknown population parameters and describe the relationship between a predictor variable and the response variable. In linear regression, coefficients are the values that multiply the predictor values. My research topic is to estimation of regression coefficients in spatially auto correlated error terms. Spatial autocorrelation occurs when population members are related through their geographic location. In this study, we use a first-order spatial autoregressive formulation to model the correlation among the errors of a linear demand equation that explains origin-destination flows. The process splits the error term for each observation into a weighted sum of all the other errors and a purely random noise. The weights are new parametric

functional forms defined to measure the proximity between origins and destinations of flows. The parameters of these weights, along with the other parameters of the model, are estimated by the method of maximum likelihood. This paper presents a maximum likelihood procedure for simultaneously estimating the parameters of the correlation function and the regression coefficients. The purpose of this paper is to provide a third alternative to estimate the covariance matrix of the error terms so that this information can be used to obtain efficient estimates of the regression coefficients and the unbiased estimates of the standard errors. The method presented is based on the notion that the correlation between the error terms is a function of the distance between observations.

REFERENCES

1)ROBIN A DUBIN-THE REVIEW OF ECONOMICS AND STATISTICS VOL.70, NO.3(AUG..1988), PUBLISHED BY THE MIT PRESS.

2)A K SHARMA-TEXTBOOK OF CORRELATIONS AND REGRESSION, DISCOVERY PUBLISHING HOUSE, NEW DELHI.

3)GRIFFITH, DANIEL A-SPATIAL AUTOCORRELATION AND SPATIAL FILTERING, SPRINGER SCIENCE AND BUSINESS MEDIA.

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