[Summary]

Regression Analysis for Qualitative Variables

Subject:	Business Economics
Course:	B. A. (Hons.), 5th Semester, Undergraduate
Paper No. & Title:	Paper – 531 Elective Paper Q1 – Advanced Econometrics
Unit No. & Title:	Unit – 4 Binary Data and Limited Dependent Variable Models
Lecture No. & Title:	Lecture – 1 Regression Analysis for Qualitative Variables

Summary

Many times we have to deal with qualitative data concerning sex, religion, marrital status, educational status etc. To deal with such data, we introduce the concept of dummy or categorical variables. This transforms qualitative variables into quantitative variables and then they can be used for regression.

We may have dummy independent or dummy dependent variables, but here we study only the case of dummy independent variables. When we define the dummy variables, we should be careful so that we are not held up with dummy variables trap arises due to multicollinearity.

Dummy variables can occur alone as independent variables or they may occur with explanatory variables also. Accordingly we get ANOVA model or ANCOVA model.

One interesting application for dummy variables is called pooling of cross section and time series data. Here combining two regressions by means of dummy variables method gives unbiased and efficient estimators.

We can also study the interaction effect by using dummy variables when dummy independent variable occur with explanatory variables.

Dummy variables method can also be used to deseasonlise given time series. A specific model and its extension is studied here.

A very interesting application of dummy variables technique is piecewise regression. Here two regressions are separated by a threshold value and their combination can be studied by using dummy variables. A caution is given to interpret log-lin model when we use dummy variables.