

Spring 2022

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**QMB 6912
Capstone Project in Business Analytics**

Solutions: Problem Set #2

In this paper the authors Lung-Fei Lee and Robert P. Trost introduced a model where they switched regression models and combined several different limited dependent variables into general framework.

Then they applied the model to the housing data to estimate the housing expenditure which consider the amount of money to spend on expenditure and whether to own house or not.

In the introduction they started with presenting the Tobin model, which uses a maximum likelihood procedure to estimate model with truncated dependent variable with many observations are truncating.

They explain how the structures of these models are highly nonlinear and maximum likelihood estimation methods are used. But the success of the maximum likelihood depends on numerical iterative algorithms.

Their purpose was to suggest a simple method of obtaining initial estimates for a particular class of limited dependent variable models. And they introduced a model that combined several different limited dependent variable models into one general framework.

After generating a simplified model, they applied it to the housing data, and showed that previous studies only emphasized one part of the complete model. They argued that other models only considered equations for owners and renters, and others only considered the consumer's rent versus own decision. They brought a full model which allows the determination of owning or not and how much to spend.

For a conclusion, they introduced a general limited dependent variables model and argued that other models presented before are kind of special cases of their model. They showed a simple method to generate estimators for the model, consistent on two steps, the first step is probit analysis, and second is the least squares, which they consider an easy way to analyze the identification of the model.

They studied the housing expenditure with their simplified model which they argued it differ from older studies because it considers how much to spend or whether to own or not.