Debre Markos University

Department of Economics

Econometrics-II Worksheet

1. For a sample of 200 married females, we are interested in explaining participation in market employment from exogenous characteristics in $X\_{i}$(age, family composition, and education). Let $y\_{i}=1$ if person *i* has a paid job and 0 otherwise. Suppose we estimate a linear regression model by ordinary least squares,$ y\_{i}=\acute{β}x\_{i}$
2. Give two reasons why this is not really an appropriate model.
3. As an alternative, we could model the participation decision by a logit model. Explain the logit model.
4. Give an expression for the loglikelihood function of the logit model.
5. How would you interpret a positive $β$coefficient for education in the logit model?
6. How would you interpret a positive $β$coefficient for education in LPM model?
7. Compare and contrast probit & logit model in brief.
8. Suppose that you are aims to your thesis on “Household willingness to pay for improved water supply in Debre Markos Town, Ethiopia.” From the qualitative choice models which one you have to use?
9. If you are interested to examine the determinants of income of households $y\_{ i} including the following dummy explanatory variables x\_{i} (age, sex,color and educat$ion)$ y\_{ i} is income of the i^{th} households,D\_{1}=\left\{\begin{array}{c}1,if female\\0, \&otherwise\end{array}\right. ,D\_{2}=\left\{\begin{array}{c}1,if white \\0, \&otherwise\end{array} \right. ,D\_{3}=\left\{\begin{array}{c}1, MSC \\0, \&otherwise\end{array}\right.$, $D\_{4}=\left\{\begin{array}{c}1,PHD \\0, \&otherwise\end{array} , D\_{5}=\left\{\begin{array}{c}1,professor\\0, \&otherwise\end{array} \right.\right.$ $ and x\_{i} is age of respondent$ then contract the model and answer the following questions
10. Interpret the mean income of males?
11. Interpret the mean income of female?
12. Interpret the mean income of male professor?
13. Interpret the mean income of female professor?
14. Interpret the mean income of white professor?
15. Interpret the mean income of black professor?

(Here you can add your own questions and exercise more)