Applied Microeconometrics

Professor

Prof. Jaume Garcia
email: jaume.garcia@upf.edu
Department of Economics and Business
Universitat Pompeu Fabra

Objectives and contents

The use of survey data is becoming a common practice among economists and social scientists both at academic and professional level, and this applies to the field of sports economics. The main characteristic of this data is that it contains qualitative information, making the use of the regression model not suitable when we deal with models where the dependent variable is either a choice (practicing sports activities or not) or a status (winning or not a penalty shooting), or where the dependent variable only takes non negative values and a significant percentage of the observations are zeroes (expenditure on sports activities or time spent in physical activities).

In this course we deal with estimation of these models, paying special attention to the interpretation of the estimates and the limitations of the different models in the literature.

The course is organized in three blocks: the first one (two sessions) devoted to discrete choice models, including count data models (number of goals scored by team); the second one (two sessions) to limited-dependent variable models, including sample selection issues typical when dealing with cross-section data (estimation of wage equations); and the third one (one session) devoted to models in which the dependent variable is the length of a spell in a particular status (time a manager is a club) and we are interested in estimating how the duration in a particular status affects the probability of leaving that status.

Practical sessions will be devoted to how to estimate these models using STATA and how to interpret the results. This will be done using real data for different fields with special attention to sports data. Empirical papers will also be described and discussed in the lectures.

Course Outline

1. Discrete choice models (I)

Binary choice models
- *Linear probability model*
- *Utility maximization models: Probit and Logit*
- *Marginal effects*
- *Selection criteria*
- *Example: Penalty shooting*
- *Example: Housing tenure*

Multinomial models
- *Multinomial Logit*
- *Independence of Irrelevant Alternatives*

Marginal effects
Conditional Logit model
Example: Predicting games results
Example: Transportation demand

General references:
Cameron and Trivedi (2005), *Ch. 14, 15.1 to 15.5*
Cameron and Trivedi (2009), *Ch. 14*
Wooldridge (2002), *Ch. 15.1 to 15.6*

2. Discrete choice models (II)

Nested Logit model
Mixed Logit model (random parameters)
Ordered models
Standard ordered model: Probit and Logit
Marginal effects
Limitations of the standard ordered model
Example: Frequency of physical activity
Example: Predicting games results
Example:Perceived health status

Count data models
Poisson model
Negative binomial models
Example: Attendance to a fitness centre
Example: Number of visits to the GP

General references:
Cameron and Trivedi (2005), *Ch. 15.6 to 15.9, 20*
Cameron and Trivedi (2009), *Ch. 15, 17*
Wooldridge (2002), *Ch. 15.9, 15.10,19*

3. Limited dependent variable models (I)

Tobit model
Estimation
Interpretation of the coefficients
Limitations
Example: Expenditure in sporting goods
Example: Gambling expenditure

Other applications of the Tobit model
Example: Football match attendance

General references:
Cameron and Trivedi (2005), *Ch. 16.1 to 16.3*
Cameron and Trivedi (2009), *Ch. 16.1 to 16.4*
Wooldridge (2002), *Ch. 16.1 to 16.6*

4. Limited dependent variable models (II)

Sample selection model
Two-part models
Double-hurdle models
Estimation

Particular cases
Example: A Willingness-To-Pay model
Example: Tobacco consumption

Count data models
Zero inflated models

General references:
Cameron and Trivedi (2005), *Ch. 16.4 to 16.7*
Cameron and Trivedi (2009), *Ch. 16.5 to 16.6*
Wooldridge (2002), *Ch. 16.7, 18*

5. Duration models

Basic concepts
Continuous time models
Exponential. Weibull, Log-logistic

Types of data
Longitudinal/retrospective
Cross-sectional
Estimation

Heterogeneity
Non-parametric methods
Example: Managers quits and dismissals
Example: Unemployment duration
Example: Propensity to start smoking

General references

Jones, A., *Applied Econometrics for Health Economists: A Practical Guide*, Radcliffe Publishing, 2007 (basic)

Jones, A., Rice, N., Bago d'Uva, T. and Balia, S., *Applied Health Economics*, Routledge, 2013 (basic)

Greene, W.H., *Econometric Analysis*, Prentice Hall, 2008 (intermediate)

Cameron, A.C. and Trivedi, P.K., *Microeconometrics. Methods and Applications*, Cambridge University Press, 2005 (advanced)

Cameron, A.C. and Trivedi, P.K., *Microeconometrics using STATA*, STATA Press, 2010 (advanced)

Wooldridge, J.M., *Econometric Analysis of Cross-Section and Panel Data*, MIT Press, 2010 (advanced)

Evaluation

Students will have to write a short empirical essay (2,500 words), chosen by them, related to one or some of the topics covered in the course. They have to submit the essay by e-mail before December 15.