# Econometrics III
# Exercise List#2

*EXERCISE*:

The information contained in the Stata file *enquesta2018.dta* is described in *enquesta.pdf*

We want to estimate a multinomial discrete choice model to analyse the determinants of the transportation mode used by university students.

Generate the following variables:

PUBLIC= 1 if TRANSPORT =1, 2, 3 or 8, and 0 otherwise

MEDI= 1 if TRANSPORT=1,2,3,8
2 if TRANSPORT=4,7
3 if TRANSPORT=5,6

and also transform the distance variable in logs.

a) Represent using a histogram the frequency distribution of the different transportation modes for each year. Do you find significant differences among the different histograms? [Note: execute **histogram transport, percent discrete by(year)**]

b) Calculate the proportion of individuals using each type of transportation. Estimate a multinomial Logit model without explanatory variable apart from the constant term. Compare the adjusted probabilities of this models with the previous proportions.

c) Estimate a model for the choice of the transportation mode where the explanatory variables are age, gender, distance (log), whether the individual is a UPF student or not and the year (variable *year* in the data file). Interpret the estimated coefficients. Test the IIA hypothesis eliminating alternative 4.

d) Calculate the marginal effects of the explanatory variables, pointing out its relevance in the different alternatives.

e) Estimate a model as that in c) for the dependent variables *public* and *medi*. Compare the results with those obtained in c).

*READING:* Lee, G., O'Leary, J.T., Lee, S.H. and Morrison, H. (2002), "Comparison and contrast of push and pull motivational effects on trip behaviour: an application of a multinomial logistic regression model", *Tourism Analysis*, 7, 89-104