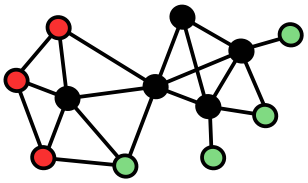
Centro de Investigação em Sociologia
Económica e das Organizações



Instituto Superior de Economia e Gestão
UNIVERSIDADE TÉCNICA DE LISBOA

A Short Summer Course in Advanced Methods for Social Network Analysis

Data: 7 - 11 Julho 2008

Horário: 10h -12h ; 14h - 16h

Local: Lisboa, ISEG (Instituto Superior de Economia e Gestão)

Organização: SOCIUS

DOCENTE: Filip Agneessens is a Postdoctoral Fellow of the Research Foundation – Flanders (FWO), Ghent University. He teaches a Master course on Structural Analysis at Ghent University, and a course on Network Analysis as part of the Master After Master in Quantitative Analysis in the Social Sciences (KUL, KUB). He is also co-instructor of the Advanced Social Network Course at the Essex Summer School.

PRÉ-REQUISITOS: Participants should have taken an introductory course in social network analysis, or at least be familiar with such terms as mutuality, indegree and outdegree. Participants should also have taken a basic course in (logistic) regression analysis

PROGRAMA: This course focuses on advanced statistical methods within social network analysis. The course aims to familiarize participants with a series of statistical methods for analyzing social network data. After a short introduction into simple statistical tests, we will focus on 2 major approaches in social network analysis:

- Exponential Random Graph Models (ERGM or p* models) to model and statistically test local structural forces (e.g. reciprocity, transitivity, degree distribution, differences in popularity and expansiveness between categories of actors (such as gender or age) and homophily). Such models enable one to answer questions such as:
    - Is there more reciprocity in my observed trust network than could be expected by chance (i.e. is there a tendency for actor 1 to trust actor 2, if actor 2 trusts actor 1)?
    - Is there a tendency for advice to be transitive (i.e. if actor 1 asks advice to actor 2, and actor 2 asks advice to actor 3, is actor 1 more (or less) likely to ask advice to actor 3 as well?)

- Are schoolchildren with similar characteristics (e.g. same gender) more likely to be friends?

- Positional analysis (structural equivalence, regular equivalence and particularly generalized blockmodeling) to identifying “types” of actors based on their global position in the network and the relation between these groups. We will be able to answer questions such as:
    - To what extent do two individuals have the same position to others in an communication network?
    - To what extent do actors have a similar role in a friendship network?
    - Which organizations take a similar position in a supply network? And can we simplify the network by defining groups of actors that take the same position?

Participants will become familiar with specialized social network programs to answer and statistically test questions such as those presented above (“ergm” in R and “Pnet” for ERGM and Pajek for blockmodeling). By the end of the course, participants should be able to run the programs designed for these analyses, and interpret the results substantively. Participants are encouraged to bring with them their own network data to be analyzed using the techniques covered.

PROGRAMA DETALHADO

DAY 1: Graph properties and how observed graphs differ from random graphs

Networks often differ from random graphs. One of the major questions however, is “when do properties of an observed graph deviate significantly from a random graph?”. In the first session we deal with basic concepts and measures of networks, and present simple methods to tests whether an observed network deviates significantly from a series of random graphs (under different baseline models) on specific properties such as the level of mutuality (Skvoretz and Agneessens, 2006) or the level of centralization. We focus on simple enumeration and simulation methods to test such questions (Wasserman and Faust, 1994).

DAY 2 and 3: ERGM

Often an observed network will different from chance on a number of different properties, such as reciprocity, homophily, transitivity, etc. However, often these properties are related (e.g. a high level of homophily might induce a high level of mutuality). A major objective therefore is to disentangle their relative importance and test whether such forces are present in a network, when controlling for the other forces that might be present. A flexible statistical technique known as Exponential Random Graph Models (ERGM or p*) have been proposed to deal with such questions (Wasserman and Pattison, 1996; Wasserman and Robins, 2005; Robins et al., 2007).

On day 2 we introduce the general principle of ERGM, and look at some of the major local structure of dyads and triads (including reciprocity, outdegree-, indegree-distribution, transitivity and closure). On day 3 we extend the models by incorporate attributes to test expansiveness, popularity and homophily (Robins et al., 2001) and by considering multiple networks, such as advice and friendship (Lazega and Pattison, 1999).

DAY 4 (and 5): Structural equivalence, regular equivalence and blockmodeling

Networks often are not only constructed as a result of local properties. Actors often take a specific role in the network as a whole. These roles/positions can follow from being connected to the same actors, or being connected to similar actors. On day 4 we deal with structural and regular equivalence and introduce blockmodeling methods to deal with such questions (Doreian et al., 2005). On day 5 we deal with extensions of the above models and provide time for questions and problems related to the participants own research.

N. º MÁXIMO DE ALUNOS: 15

CUSTO: 300€ (redução de 50% para membros do SOCIUS, estudantes a tempo inteiro/bolseiros e desempregados).

Nota: O pagamento poderá ser feito em duas tranches de 50% cada, em cheque dirigido a SOCIUS ou transferência bancária: NIB. 003503710000205233078.

A inscrição só será validada depois de efectuado o pagamento da primeira tranche.

Data limite pagamento da 1ª tranche : 5 de Maio

Data limite pagamento da 2ª tranche : 30 de Junho

ENVIAR A FICHA DE INSCRIÇÃO, POR E-MAIL, CORREIO OU FAX, PARA:

E-mail: socius@iseg.utl.pt

Fax: 21 3951783

Morada: SOCIUS/ ISEG

Rua Miguel Lupi, 20

1249-078 Lisboa