3rd EDEN Doctoral Seminar on
Social Network Analysis (SNA): Theory and Methods

to be organised by the Grenoble Ecole de Management, LINC Lab, in collaboration
with the European Institute for Advanced Studies in Management – EIASM, Brussels,
and to be hosted by the Gyzi Cultural Centre, Fira, Santorini, Greece, June 11 – 15, 2012

Faculty & Tutors
Prof. Dimitris Assimakopoulos, Grenoble Ecole de Management & LINC Lab, France
Prof. Emilio Castilla, MIT Sloan School of Management, Cambridge, MA., USA
Prof. Soong Moon Kang, UC London, Dept. of Management Science & Innovation, UK
Prof. Marco Tortoriello, University of Navarra, IESE Business School, Barcelona, Spain

Organisers
Mrs Nina Payen, EIASM, Brussels, Belgium
Dimitris Assimakopoulos, Grenoble Ecole de Management & LINC Lab, France

Aims and Objectives
In the last few decades network organisations and social network theory and methods have risen
as a key field for research in Management and Business Studies (e.g., Brass et al 2004). This 3rd
EDEN seminar is going to introduce Social Network Analysis (SNA) theory, methods and
techniques for doctoral students who aim collecting, analysing and visualising network data for
their research in diverse organisational settings and application areas. SNA and visualisation
software such as Ucinet and Netdraw is going to be deployed throughout the seminar.
Examples from several research projects in doctoral and post-doctoral levels from both sides of
the Atlantic are going to illustrate many of the qualitative and quantitative issues related to
network theory and SNA of relational data at community, inter-organisational and inter-personal
levels of analysis. Particular attention is going to be paid in the dynamic analysis of longitudinal

1 Brass, D. J., Galaskiewicz, J., Greve, H. R., Wenpin T., 2004, Taking Stock of Networks and Organizations: a
Multilevel Perspective, Academy of Management Journal, 47(6), 795-817.
Analysis, Harvard, MA., Analytic Technologies, see http://www.analytictech.com/ucinet/ucinet.htm
data in the last one and a half days of the seminar using the Stata software. In addition students are going to be allocated time in each and every day of the seminar for reflecting on what they will have learned the previous day and also presenting their own ongoing doctoral projects for getting advice and feedback from faculty and other participants during and after the seminar, see final draft schedule in Appendix. The primary aim here is to create an intimate environment conducive for learning at the Cultural Centre / Museum of Megaro Gyzi at the scenic capital of Fira, at the island of Santorini (Greece), for about 20 doctoral students and 4 faculty from top EU/US Business Schools to share best practices and learning in the state of the art in SNA across boundaries in Europe and beyond.

Outline of the Seminar

Our seminar is going to combine lectures covering a broad range of issues, in depth tutorial discussions, and hands on training for SNA and dynamic analysis. **Four modules** are planned to be delivered as they are outlined below, including several required or/and recommended readings, that the students should ideally review and prepare before the seminar so that they accrue maximum value from it. A supporting web-site hosted by the EIASM it is going to provide access to some of these readings and related resources. Students are also required to bring along their personal computers and download before the seminar the Ucinet/Netdraw/Pajek software from [http://www.analytictech.com/ucinet/ucinet.htm](http://www.analytictech.com/ucinet/ucinet.htm) [http://pajek.imfm.si/](http://pajek.imfm.si/)

**Module 1: An Introduction to SNA theory and methods**  
**Dimitris Assimakopoulos** dimitris.assimakopoulos@grenoble-em.com

**Overview and Objectives**

The main objective of this first module is to introduce you to the field of SNA research methods, with particular reference to the emergence of new technological communities and analysis of new ‘distributed’ product development teams. We will also discuss the rationale for SNA in module 1, how to collect and organise network data, plus the main theoretical concepts of centrality at node level and cohesion at the network level. We will also illustrate these concepts and methods through examples stemming from half a dozen research projects carried out with various collaborators in the EU and US over the past decade or so.

**Session 1.** Monday, June 11, 2012, 9:00-10:30  
Introduction to SNA (part I)  
why SNA? Network data collection

**Session 2.** Monday, June 11, 2012, 11:00-12:30  
Introduction to SNA (part II)  
Centrality and Cohesion in Networks

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4 See the Stata Starter Kit, put together by UCLA’s Academic Technology Services group at [http://www.ats.ucla.edu/stat/stata/sk/](http://www.ats.ucla.edu/stat/stata/sk/)
Subsequently, the module 2 shifts the emphasis on network theory, rather than methods, see below. The module 3 will cover more advanced SNA topics and also introduce some of the issues related to the dynamic analysis of network data which is specifically the main topic of the final module 4.

**Required texts**
You may find helpful to start with the online book: *Introduction to Social Network Methods* written by Hanneman and Riddle (2005) see [http://faculty.ucr.edu/~hanneman/nettext/](http://faculty.ucr.edu/~hanneman/nettext/)

**And also the key textbook in SNA:**
Cambridge: Cambridge University Press.

**Recommended texts**


Module 2
Social networks: ties or structure?
Marco Tortoriello
MTortoriello@iese.edu

Overview & objectives
The objective of this module is to use the content of the papers assigned to explore and discuss current debates in social network research as applied to organizations. We will examine primarily theoretical issues and focus on their relationships with the methods and measures used to critically evaluate past work in the area as well as to pinpoint future directions and fruitful new line of inquiry in the area of social networks and knowledge management/innovation.

The substance of the module, in seminar format, is based on a close reading of primary works from leading researchers in each area. These works are not so much an exhaustive literature review as they are an opportunity for exploring the genre of social network theory and its application to organizational research.

You are expected to read the assigned papers thoroughly and to come prepared to contribute to class discussion. You contribute to class discussion in three ways. First, you are expected to identify and to be able to discuss the key issues in each reading. Second, once basic issues are defined you are expected to critically evaluate the work under discussion (e.g. Why was this paper published? Why is this relevant?) and propose/suggest extensions or improvements. Third and perhaps most importantly, you will constructively evaluate the positions taken by your classmates. Throughout, I encourage you to contribute to class discussion with clarifying questions and critical evaluations of the theoretical arguments and empirical evidence considered.

Required Readings


Tortoriello, M., Reagans, R., & B. McEvily. 2011. Bridging the knowledge gap, Organization Science (Published online before print August 24, 2011, doi:10.1287/orsc.1110.0688)
Recommended Readings


Module 3
Advanced Topics in Social Network Analysis
Soong Moon Kang
smkang@uel.ac.uk

Social network analysis focuses on the relationships between actors who are interdependent, and on social structure that emerges from regularities in this interdependence. The main objective of this module is to introduce you to several advanced topics in the field of SNA.

Module 3 Schedule

Session 13. Wednesday, June 13, 2012, 14:00-15:30
Different types of networks: 2-Mode networks, multiplex, etc
Recommended Reading:
Wasserman and Faust, Chapter 8

Session 14. Wednesday, June 13, 2012, 16:00-17:30
Structural Equivalence and Blockmodeling
Recommended Reading: Wasserman and Faust, Chapter 9 and 10

Brokerage and Structural Holes
Recommended Reading:

Cliqus and Small Worlds
Recommended Reading:
Wasserman and Faust, Chapter 7

Session 16. Thursday, June 14, 2012, 9:15-10:45
Structural Balance and Transitivity
Recommended Reading:
Wasserman and Faust, Chapter 6
Module 4: Event History Analysis

Emilio J. Castilla
ecastilla@mit.edu

Overview and Objectives

The main objective of this module is to introduce you to the various concepts and models available for studying change in variables of qualitative nature. This methodology is called Event History Analysis (henceforth, EHA), a term that refers to the group of techniques used to study events.

Event history analysis is used to study longitudinal data when the social process to study is the occurrence of an event. An “event” is a change from one state to another; and states are best represented by a categorical variable. Thus, such an event is measured using a categorical dependent variable. EHA has also been called survival analysis because biologists and epidemiologists were the first to use and develop this methodology in order to study the survival of organisms after certain treatments. EHA analyzes longitudinal data available for a sample of individual cases or units during a period of time when a series of events may occur. EHA allows the researcher to examine the determinants or factors behind the occurrence of any type of social event over time and can consequently help answer questions that previously could not be answered using the classic linear regression or the logit/probit models.

This module is structured as follows: First, I cover the two main models for modeling binary outcomes, the logit and probit models (Session 1). Then, I introduce the unique language used in the discussion of events and the EHA methodology available to analyze events over time (Session 2). Next, I review several of the most commonly used EHA techniques, in detail, with some examples (Session 3). In doing so, I provide a few examples of how to use the covered methodologies in research papers and reports.

Class Format and Requirements

The structure of the module (roughly) involves combining lectures on the principles associated with logit/probit models as well as event history analysis followed by the application of these models. We will pursue two types of applications:

- We will discuss articles that use the particular methods in question, with an eye toward assessing whether the data and methods are appropriate for the research question.
- I will show you how to work with data to estimate models (in Stata) and write up an interpretation of the results. In order to get started with the Stata Program, you can access the Stata Starter Kit, put together by UCLA’s Academic Technology Services group at http://www.ats.ucla.edu/stat/stata/sk/
Required Readings

Castilla, Emilio J. 2007. *Dynamic Analysis in the Social Sciences.* Oxford, UK: Elsevier and Academic Press.  (There should be ample time to order this through Amazon, etc.)


Module Schedule

**Sessions 18 & 19. Thursday, June 14, 2012:** 14h00-17h30

Part I. Models for Binary Outcomes


Part II. Applications: Models for Binary Outcomes


**Sessions 21 & 22. Friday, June 15, 2010:** 8h45-12h00

Part I. Introduction to the Basic Concepts of Event History Analysis


Part II. Descriptive Statistics for Event History Data


**Sessions 23 & 24. Friday, June 15, 2010:** 13h00-16h15

Part I. Multivariate Models for the Analysis of Events


Part II. Applications: Event History Analysis


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## Appendix: Schedule of the 3rd EDEN Seminar on SNA, June 11 – 15, 2012

<table>
<thead>
<tr>
<th>Time</th>
<th>Monday, June 11th</th>
<th>Tuesday, June 12th</th>
<th>Wednesday, June 13th</th>
<th>Thursday, June 14th</th>
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<tr>
<td>9h00-10h30</td>
<td>9h00-09h15 Session 1</td>
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<td>10h45-11h00</td>
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<td>14h00-15h30</td>
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<td>14h00 - 15h30 Session 8</td>
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<td>14h00-15h30 Session 18</td>
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<td>16h00-17h30</td>
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<td>14h30-14h45 Session 24</td>
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<td>19h00-20h00</td>
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**Monday, June 11th**
- **9h00-10h30** Session 1
  - Introduction to SNA (part 1): main concepts and methods for visualisation of graphs and analysis of key metrics at node and network levels
  - Dimitris Assimakopoulos

**Tuesday, June 12th**
- **8h30-09h15** What have we learned yesterday
  - Dimitris Assimakopoulos

**Wednesday, June 13th**
- **8h30-09h15** What have we learned yesterday
  - Dimitris Assimakopoulos

**Thursday, June 14th**
- **8h30-09h15** What have we learned yesterday
  - Structural Balance and Transitivity
  - Dimitris Assimakopoulos
  - Soong Moon Kang

**Friday, June 15th**
- **8h45-10h15** Session 21
  - Introduction to Event History Analysis
  - Emilio Castilla

**12h30-14h00 Lunch**

**14h00-15h30 Session 8**
- The role of social networks in the generation of innovation: Focussing on ties
  - Marco Tortoriello

**15h30-16h00**
- Coffee break

**16h00-17h30 Session 9**
- The case of a large new product development team in a multi-site & multi-functional business unit
  - Marco Tortoriello
  - Dimitris Assimakopoulos

**17h30 -18h30 Session 10**
- Students' presentation
  - Marco Tortoriello

**19h00-20h00 Departure**