ktu duomenų analizės ir archyvavimo centras 1922

11-13 June, 2019
Kaunas University of Technology

Introduction to Social Network Analysis: The First Whys and Hows

Monika Verbalytė, monika.verbalyte@fu-berlin.de
Freie Universität Berlin / Otto von Guericke University Magdeburg

Course Outline

Relational sociology and social network analysis (SNA) offer a different perspective on the social world and immensely enrich our box of statistical tools. Its focus on connections rather than separate individuals or organizations, and ability to assess emerging structures from these connections rather than assume what macro-level conditions could impact on them provide better ways to capture social dynamics of human individual and collective behavior.

With the rapid development of network science and increasing availability of data, we can formalize and explore many more networked phenomena: from interpersonal relations and group dynamics to political relations and media discourses. It could be applied in very different research areas: from psychology and sociology to policy analysis, international relations or communication studies.

This course is a short introduction to this fascinating world of networks. It will introduce you to the network data, their properties, basic network vocabulary and relevant concepts, application area of the network analysis, software which helps you to visualize and analyze network data, and some of the first analyses you could conduct on the network (both, defining positions of separate actor's in the network as well as properties of the whole network).

At the end of the course, you should be able to formulate a research question you could answer with the SNA, to assess what data is appropriate to answer this question, to present and describe your network, to choose suitable network measures and to conduct these analyses.

I will provide some examplary data sets, but if you have your own network data, you could do the course with them. In that case, however, give me a note in advance with the short description of or excerpt from your data. If you already have worked with the SNA and/or have some specific topics you want to discuss and do not find them in the program, please also send your requests in advance.

Program

Tuesday, 11 June 2019
Day 1: Starting with Network Data

13:15–13:30	**Registration and Welcome Coffee**
13:30–15:15	**Slot 1: Collection and Preparation of Network Data** We will discuss what we need SNA for and what kind of data is suitable for these analyses. Then, we will continue with peculiarities of the network data and formats they are stored in, as well as discuss what to be aware of while collecting, preparing and interpreting the data.

15:15–15:45	**Coffee break**
15:45–17:30	**Slot 2: Network Visualization** We will dare the first glimpse into our data by making our network "visible". We will learn the first vocabulary to describe our data and what parameters we could bring forward in the visualization.

Wednesday, 12 June 2019
Day 2: Understanding Network

13:30–15:15	**Slot 1: Understanding Actors' Positions in the Network** We will start with main parameters on which individual's characteristics in networks are based: link, degree, distance and attribute. We will discuss network statistics available at the individual level - different centrality measures, similarity, equivalence, how these measures are related to the theoretical concepts of power, popularity and influence, and how they might influence formation of further connections and groups.
15:15–15:45	**Coffee break**
15:45–17:30	**Slot 2: Understanding Structure of the Network** What main network properties tell us about our subject of analysis? We will discuss measures of density, reciprocity, centralization, clustering, formation of smaller cliques and sub-groups as well as bigger communities.

Thursday, 13 June 2019
Day 3: Testing Network Hypotheses

11:30–13:00	**Slot 1: Correlations, Regressions and What More SNA has to offer** After learning the basics of descriptive statistics, we also will try to formulate and test network hypotheses. The particularities of network statistics will be explained as well as why usual regression models cannot be applied to the network data. We will wrap up with the list of the advanced SNA opportunities.
13:00–13:30	**Coffee break**
13:30–16:00	**Meeting with research groups advances SNA users** I invite those who already work with the network data and SNA to meet and exchange our ideas and problems. I cannot promise to solve all of them, but I could comment on your papers or projects in whatever stage they currently are: at the beginning or almost published. If you want to discuss some specific work of yours with me, please send your paper or project description beforehand.

Literature:

1. Borgatti, Stephen; Everett, Martin; Johnson, Jeffrey (2013): Analyzing Social Networks. Los Angeles et al.: Sage.
2. Hanneman, Robert A.; Riddle, Mark (2005): Introduction to social network methods. Riverside: University of California (published in digital form at http://faculty.ucr.edu/~hanneman).
3. Knoke, David; Yang, Song (2008): Social Network Analysis (Quantitative Applications in the Social Sciences). Los Angeles: Sage.
4. Scott, John (2013) Social Network Analysis. 3rd edition. London: Sage.