Using R and igraph for Social Network Analysis

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Abstract

The workshop introduces R and package igraph for social network data manipulation, visualization, and analysis.
The material will cover:

0. Brief introduction to R.
1. Creating and manipulating network data objects.
2. Working with node and tie attributes.
3. Creating network visualizations.
4. A tour through computing selected SNA methods including: degree distribution, centrality measures, shortest paths, connected components, quantifying homophily / segregation, network community detection.
5. Connections to other R packages for SNA, e.g.: statnet, RSiena, egonetR.

The focus is on analysis of complete network data and providing prerequisites for other workshops including those on ego-network analysis, e.g.: "Introduction to ego-network analysis" by Raffaele Vacca

The workshop have been successfully organized on earlier Sunbelt conferences (since Sunbelt 2011) and on European Social Networks conference (EUSN 2014). The workshop attracted a lot of attention (total of over 130 participants since 2011) and positive feedback (80% report being satisfied, 75% would recommend the workshop to a colleague). The earlier workshop title was "Introduction to Social Network Analysis with R". The content have been updated to catch up with newest developments in igraph and related packages.

Target audience and requirements

The workshop is designed to be accessible for people who have limited experience with R. The participants are expected to be familiar with basic R objects (e.g. matrices and data frames) and functions (e.g. reading data, computing basic statistics, basic visualization). Some brief introduction to R will be provided.

To be absolutely on the safe side we recommend taking an internet course on the level of R programming course on Coursera (https://www.coursera.org/course/rprog), which you can take every month, or skimming through a book on the level of initial eight sections of Roger D. Peng book "R programming" (https://leanpub.com/rprogramming).

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Participants are encouraged to bring own laptops. We have prepared examples and exercises to be completed during the workshop. Detailed instructions how to prepare will be distributed in due time.