Evolution of Acquaintance Networks



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Empirical data Research question Preliminary analysis

Empirical data

• Fachhochschule der Sächsischen Verwaltung Meißen

- university of applied sciences for the formation of civil servants
- 3 waves after 1, 4 and 10 weeks, at t₀: no links
- 55% live in boarding school, no contacts to town
- four specializations (70,65,18,44 students)
- 10 courses (size \approx 20 students)

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Т0	1 Weeks	T1	2 Weeks	T2	10 Weeks	Т3
Sept. 1 st 2010		network demograph Big 5	y	network intelligence		network networking
N=199		interests networking	I			online profiles
	response:	92%		86%	online	80%
					membership: response:	79% 60%

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Questionnaire

- *Q*₁: "Of whom do you know where he/she comes from?"
- Q2: "Of whom do you know if he/she is in a permanent relationship or not?"
- *Q*₃: "With whom do you spend your free time?"
- Q4: "With whom would you talk about personal problems?"

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Research question

• How large are the influences of the two complementary effects Homophily and Matthew Effect?

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Preliminary analysis

- 199 students, response rates: 90%, 81%, 69%
- age: mean 21.8, SD. 4.3
- 59% women
- Jaccard Index $t_2 \rightarrow t_3 0.42$
- missings: 27%

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Specializations, t₂



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Boarding school, *t*₂

 $\rightarrow \text{visone}$

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Sex, t_3



Estimates Goodness of Fit

RSiena results

	Mode	1	Mode	12
	estimate	s.e.	estimate	s.e.
rate	12.6	(0.8)	12.5	(0.7)
outdegree	3.2	(0.2)	-3.1	(0.2)
reciprocity	1.2	(0.1)	1.2	(0.1)
trans. ties	3.6	(0.1)	1.6	(0.2)
inPopSqrt	-0.3	(0.1)	-0.3	(0.1)

Estimates Goodness of Fit

RSiena results

	Model 1		Model 2	
	estimate	s.e.	estimate	s.e.
specialization same	0.8	(0.1)	0.8	(0.1)
course same	0.5	(0.1)	0.5	(0.1)
sex same	0.1	(0.1)	0.1	(0.1)
age sim	0.5	(0.2)	0.5	(0.2)
boarding sc. same	0.4	(0.1)	0.4	(0.1)
rel st. same	-0.1	(0.1)	-0.2	(0.1)
intelligence sim	0.4	(0.2)	0.4	(0.2)
B5 Extraversion sim		. ,	-0.2	(0.2)
B5 Agreeableness sim			0.3	(0.2)
B5 Conscientiousness sim			-0.4	(0.2)
B5 Neuroticism sim			0.2	(0.2)
B5 Openness sim			0.2	(0.2)
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Estimates Goodness of Fit

GoF Indegree Model 1

Goodness of Fit of IndegreeDistribution



Estimates Goodness of Fit

GoF Indegree Model 2

Goodness of Fit of IndegreeDistribution



Estimates Goodness of Fit

GoF Outdegree Model 1

Goodness of Fit of OutdegreeDistribution



Estimates Goodness of Fit

GoF Outdegree Model 2

Goodness of Fit of OutdegreeDistribution



Introduction Es RSiena results Go

Estimates Goodness of Fit

GoF Geodesic distance Model 1

Goodness of Fit of GeodesicDistribution



Estimates Goodness of Fit

GoF Geodesic distance Model 2

Goodness of Fit of GeodesicDistribution

