Preferred citation style for this presentation

Kowald, M. (2011) Connected personal leisure networks: Survey challenges and first empirical results, Eindhoven University of Technology, April 2011.

Connected personal leisure networks: Survey challenges and first empirical results

M. Kowald

IVT
ETH
Zürich

April 2011

Institut für Verkehrsplanung und Transportsysteme
Institute for Transport Planning and Systems

Eidgenössische Technische Hochschule Zürich
Swiss Federal Institute of Technology Zurich

Motivation

Using the methods of SNA aims to:

- Approach and explain leisure traffic

Taking a snowball allows to:

- Address the structure of personal networks
- Address personal relations on a macroscopic level

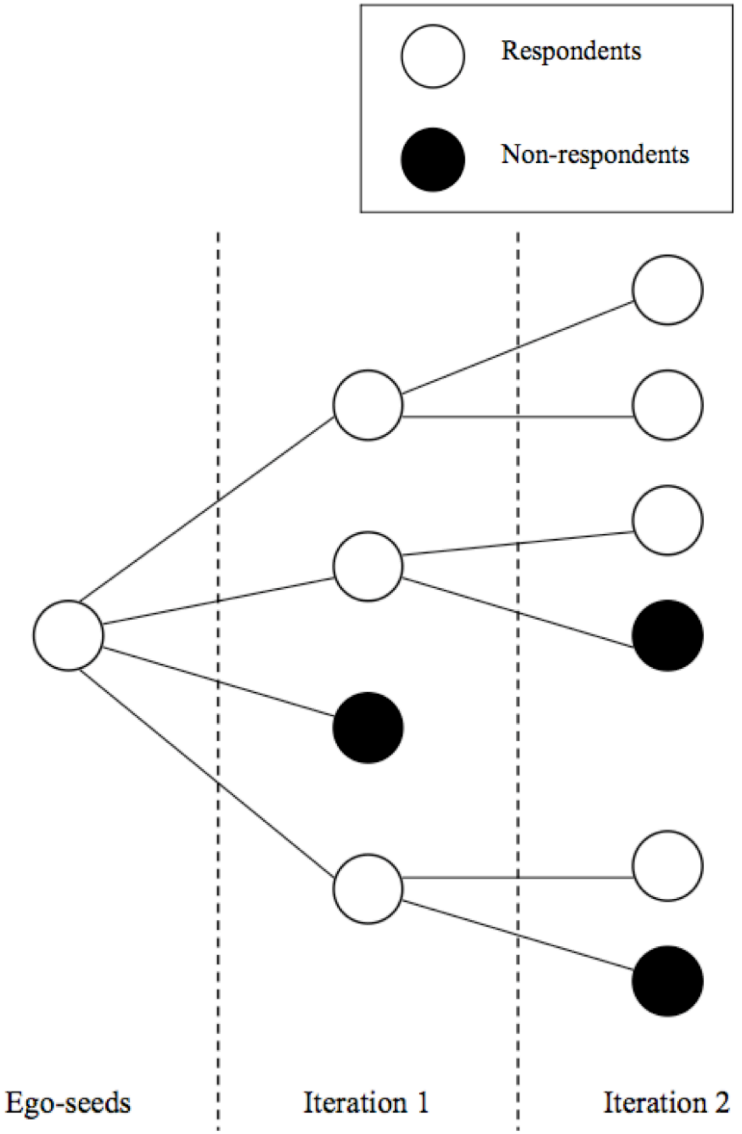
Survey instrument

- Ego's characteristics
- Name generator
    - Leisure contacts
    - Emotionally important contacts
- Name interpreter
- Sociogram

Snowball Sampling

Challenges:

- Start with representative seeds
- Avoid selection bias
- React to homogenious clusters
- Correct the overrepresentation of ‚socializers' and underrepresentation of ‚isolates'



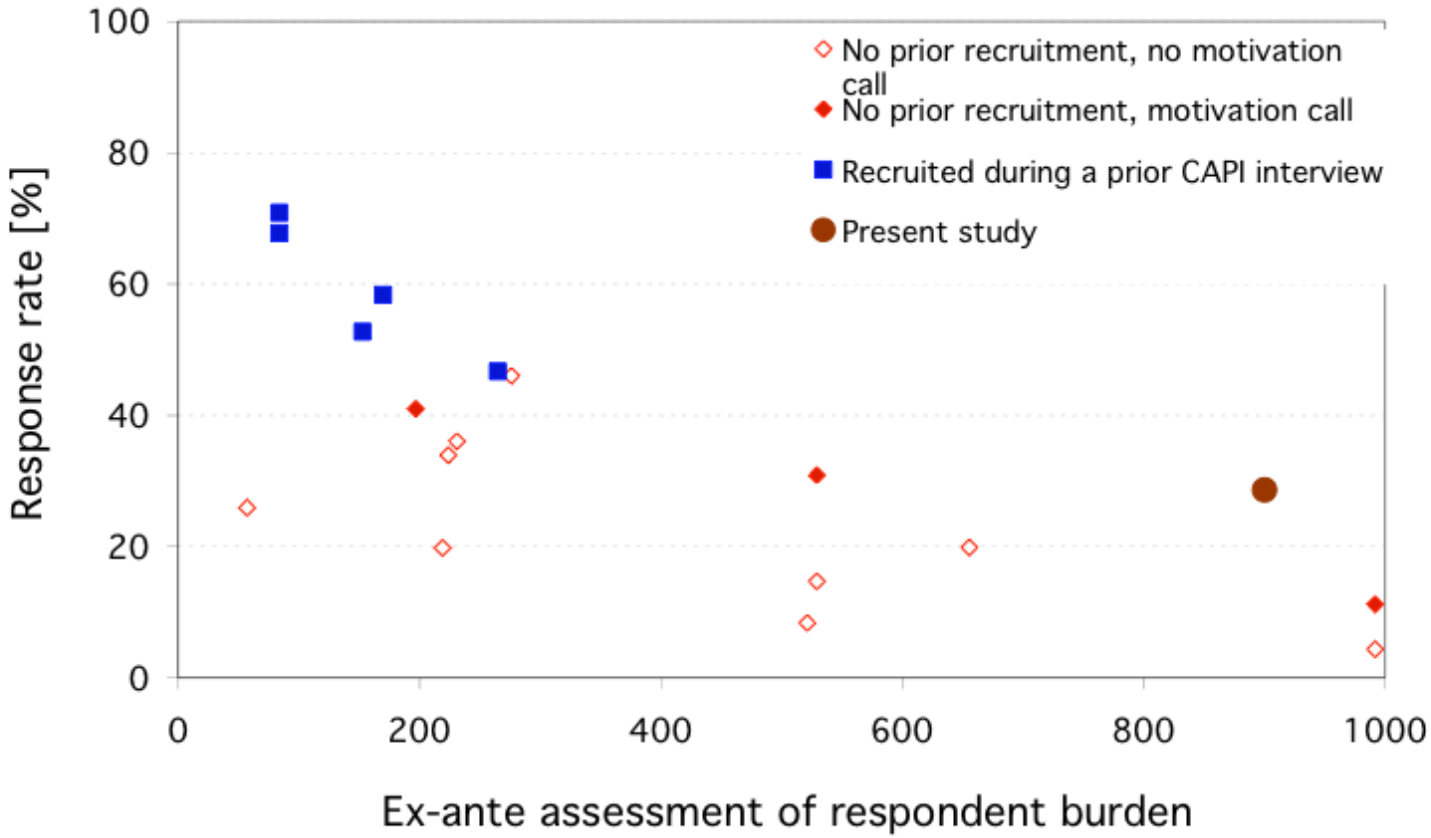
Survey protocol

Step	Ego-seeds	Iteration 1 and 2
Announcement letter	yes	yes
Recruitment call	yes	yes
Post card of Ego	-	if permitted
Interview (+ incentive)	only	-
Written instrument (+ incentive)	if requested	only
Diary survey	only participants	only participants

Response rate

	Whole sample		**Seeds**	**I 1**	**I 2**	**I 3**	**I 4**
	[abs]	[%]	[abs]	[abs]	[abs]	[abs]	[abs]
Sample size	4957		275	568	1827	2287	605
Re-identified			-	-	247	227	80
Excluded			-	-	-	471	100
Wrong addresses	1197		28	179	628	362	76
Contacted	2600	100.0	247	389	952	1012	267
Participants	685	26.3	40	120	276	249	49
Response rate			16.2	30.8	29.0	24.6	
…with recruitment	615	23.6	16.2	27.2	26.2	21.7	
…without recruitment	70	2.7	-	3.6	2.8	2.9	

Response rate and response burden

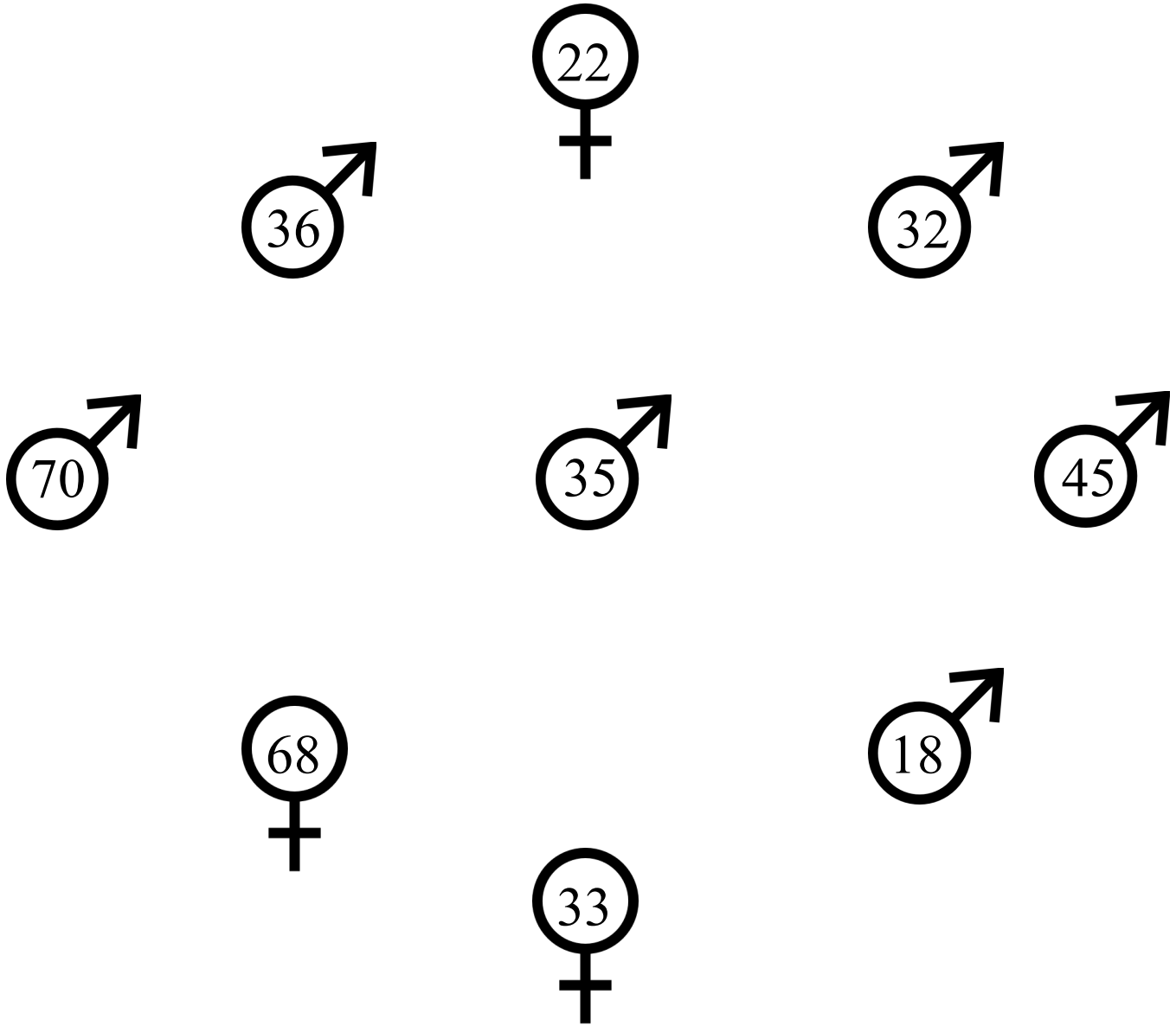


The fit between sample and target population

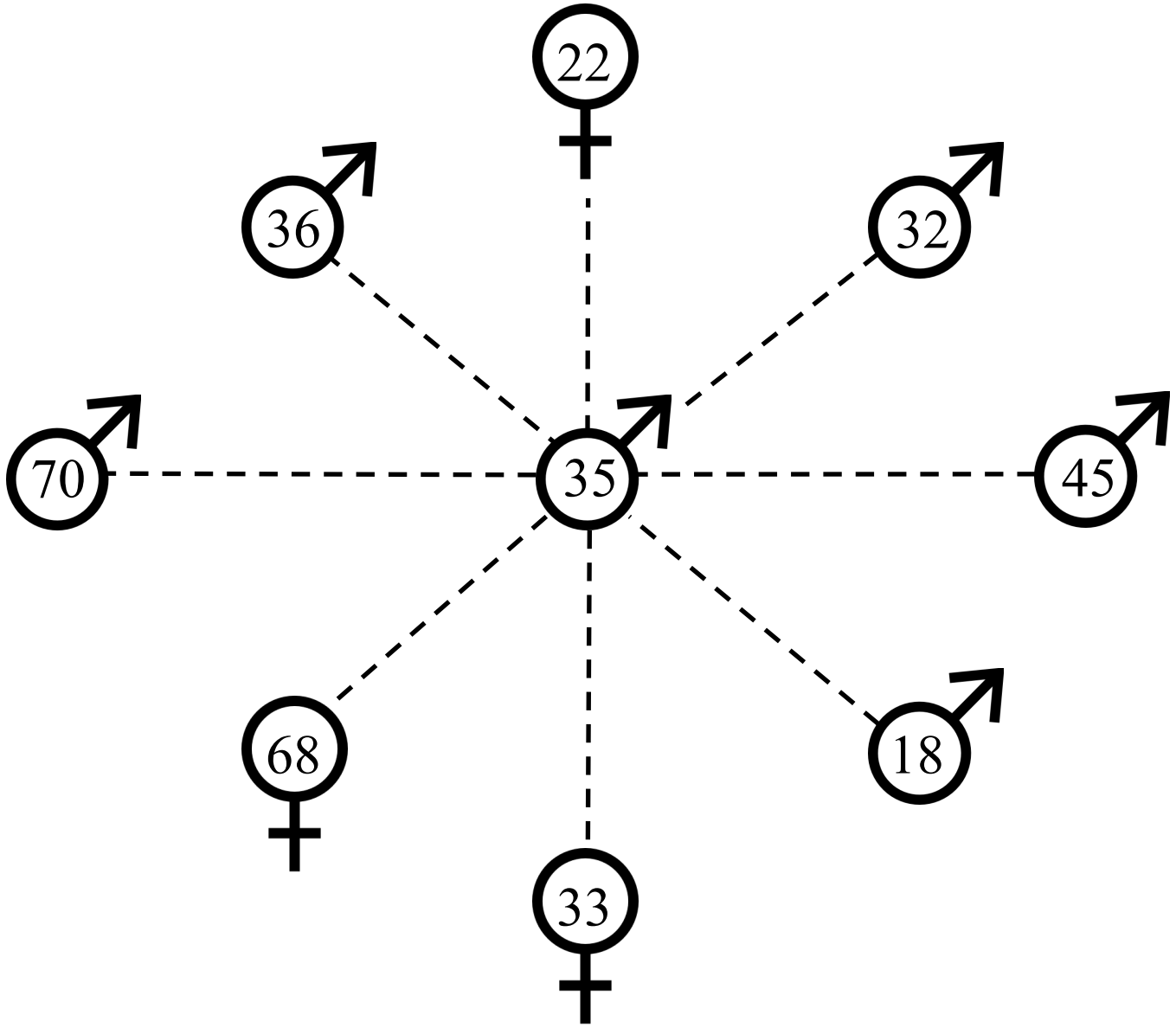
		All Egos (n = 665)	All Alters (n = 12756)	Microcensus Switzerland
[%] Gender	- Male	38.9	42.4	48.70
	- Female	61.1	57.6	51.30
[%] Civil status	- Single	13.9	22.5	29.90
	- Married	69.8	63.5	54.50
	- Divorced	9.4	8.2	7.60
	- Widowed	5.6	4.8	6.60
	- Living seperately	1.4	1.0	1.40
[%] Education	- Primary	4.3	5.6	20.1
	- Secondary	48.2	55.2	64.3
	- Higher	47.5	39.2	15.6

Connected personal leisure networks

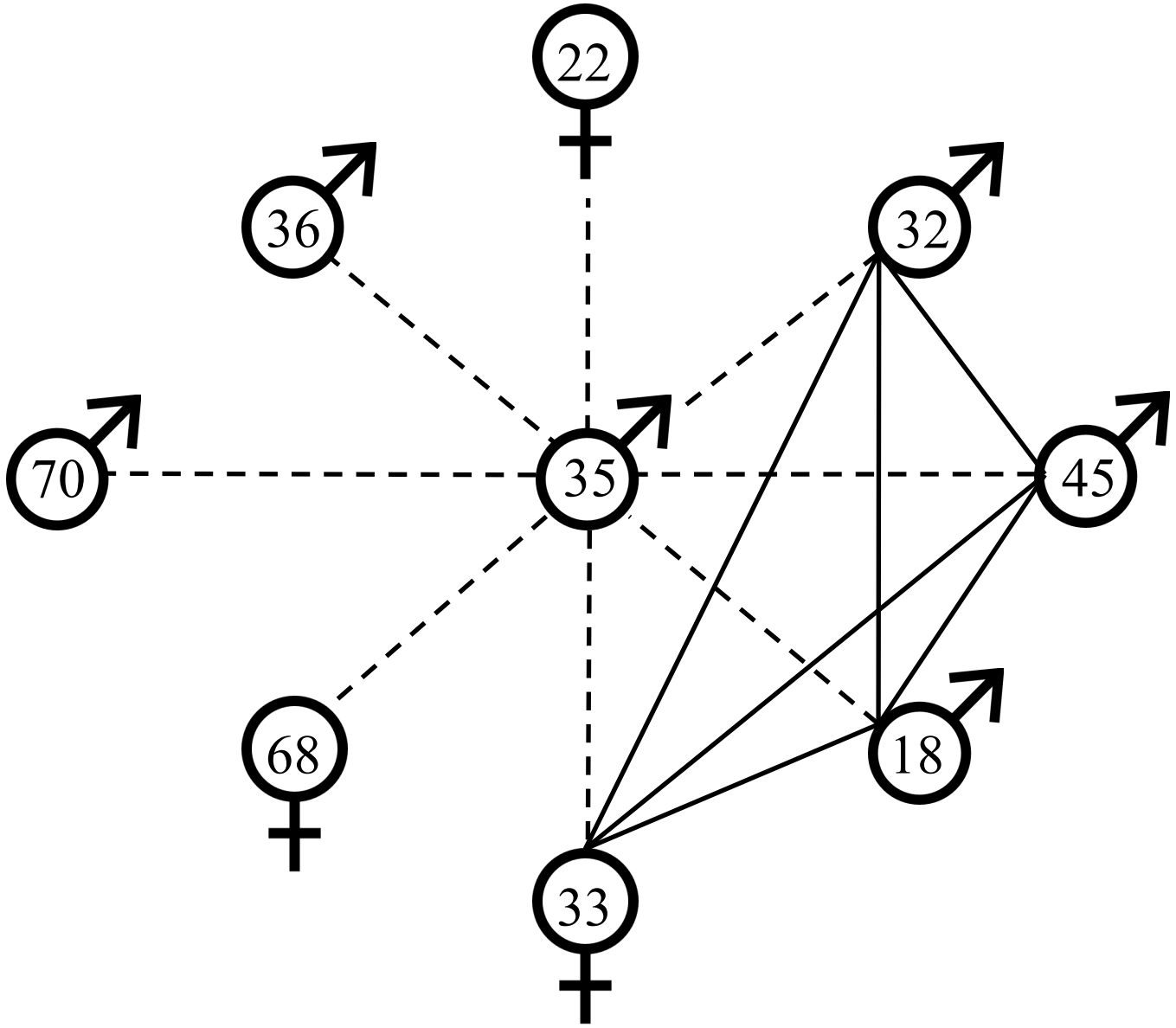
Connected personal leisure networks



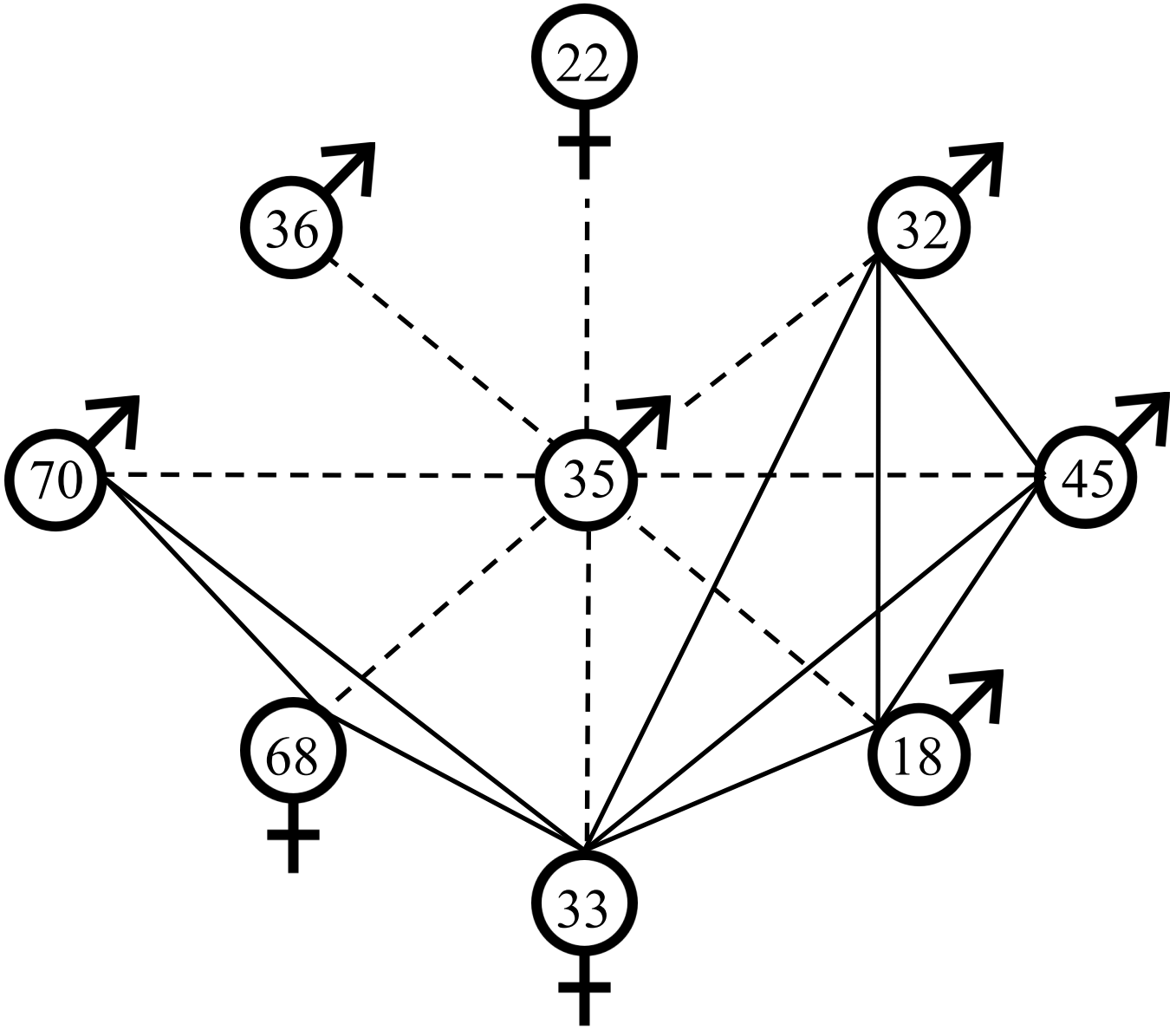
Connected personal leisure networks



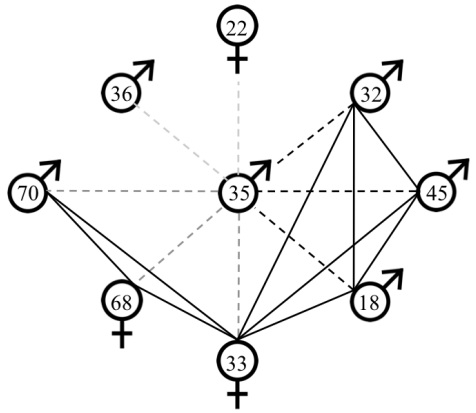
Connected personal leisure networks

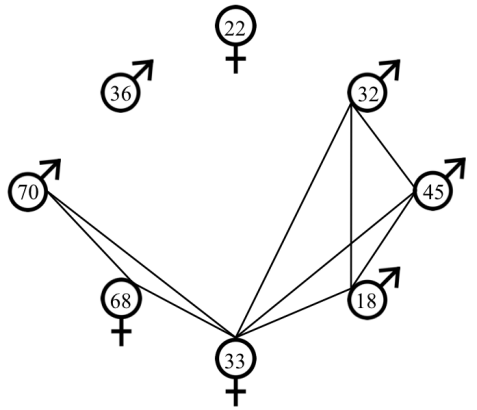


Connected personal leisure networks



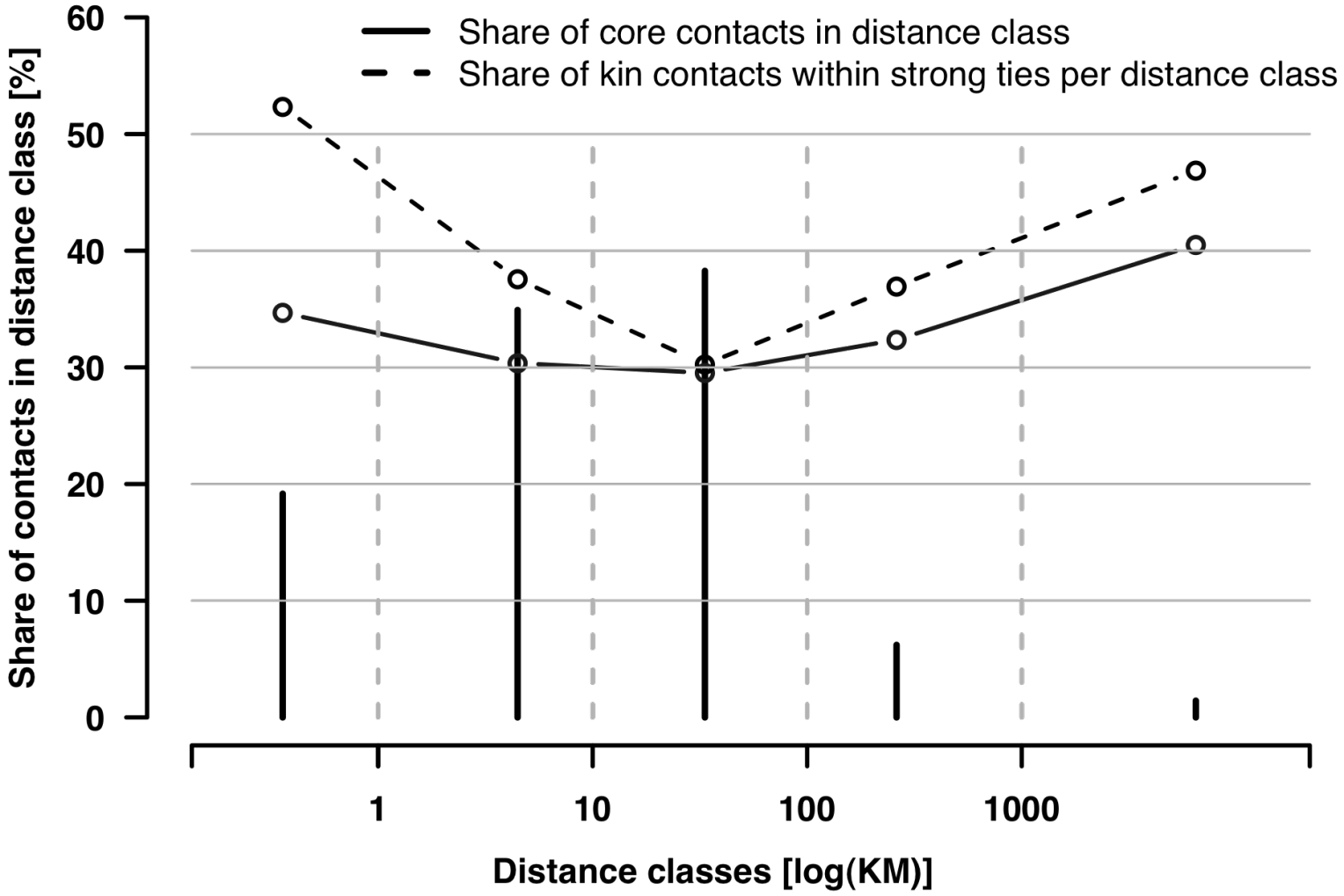
Personal networks (of egos with sociogram)



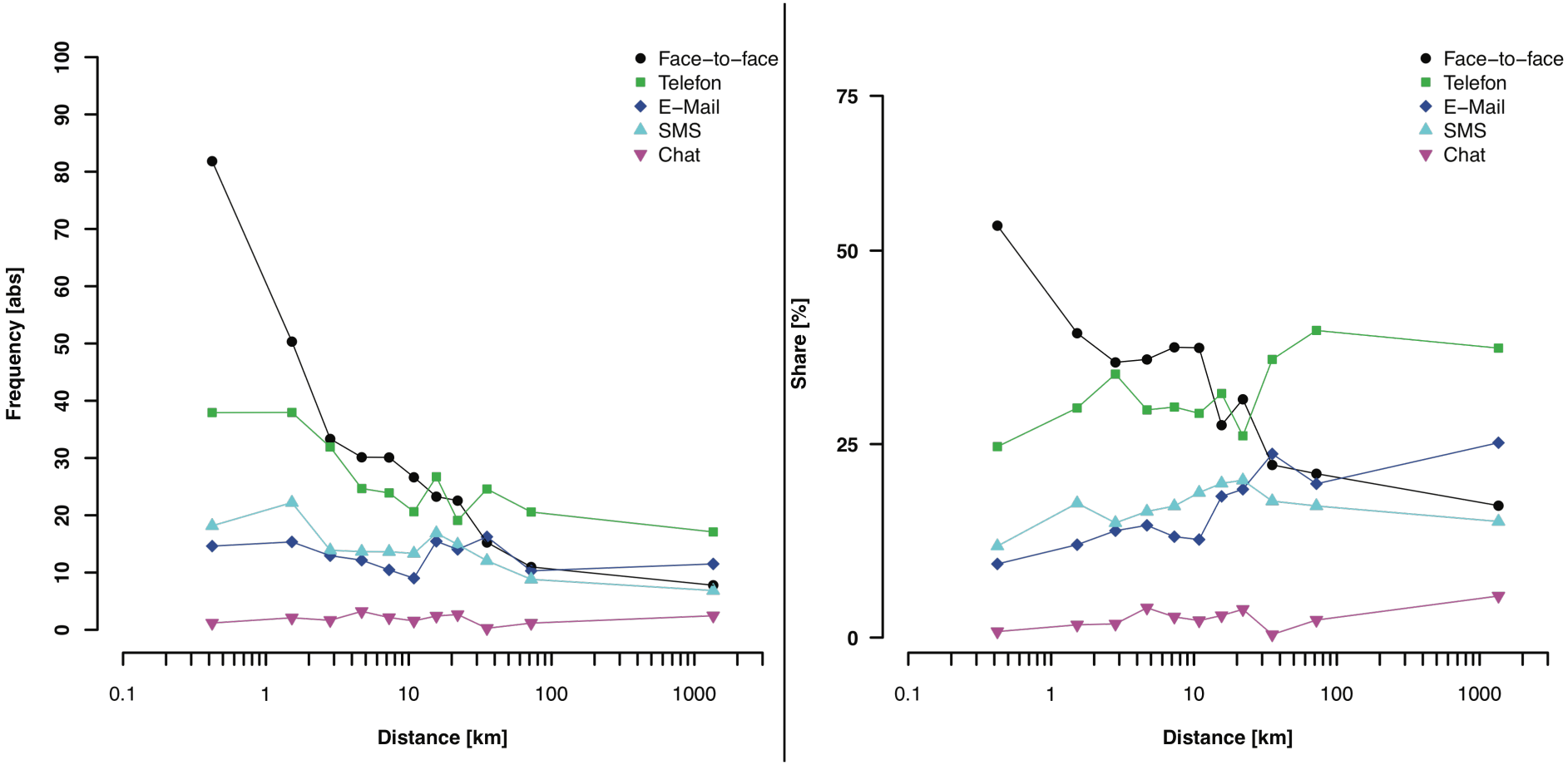


(n = 531)	Mean	1st qu.	Median	3rd qu.	St.-dev.	Range
Number of alters	21.5	13.5	20.0	29.0	10.1	38.0
Number of relations	46.4	10.0	23.0	56.5	61.0	398.0
Isolates	6.7	2.0	5.0	10.0	6.1	33.0
Cliques	4.2	2.0	4.0	5.0	2.7	19.0
Components (w/o isolates)	2.6	1.0	2.0	3.0	1.5	8.0
Centralization	0.2	0.1	0.2	0.3	0.2	1.0
Betweenness	0.1	0.0	0.1	0.1	0.1	0.5

The geographical spread of leisure contacts



Egos' contacts with alters: Modes and frequencies



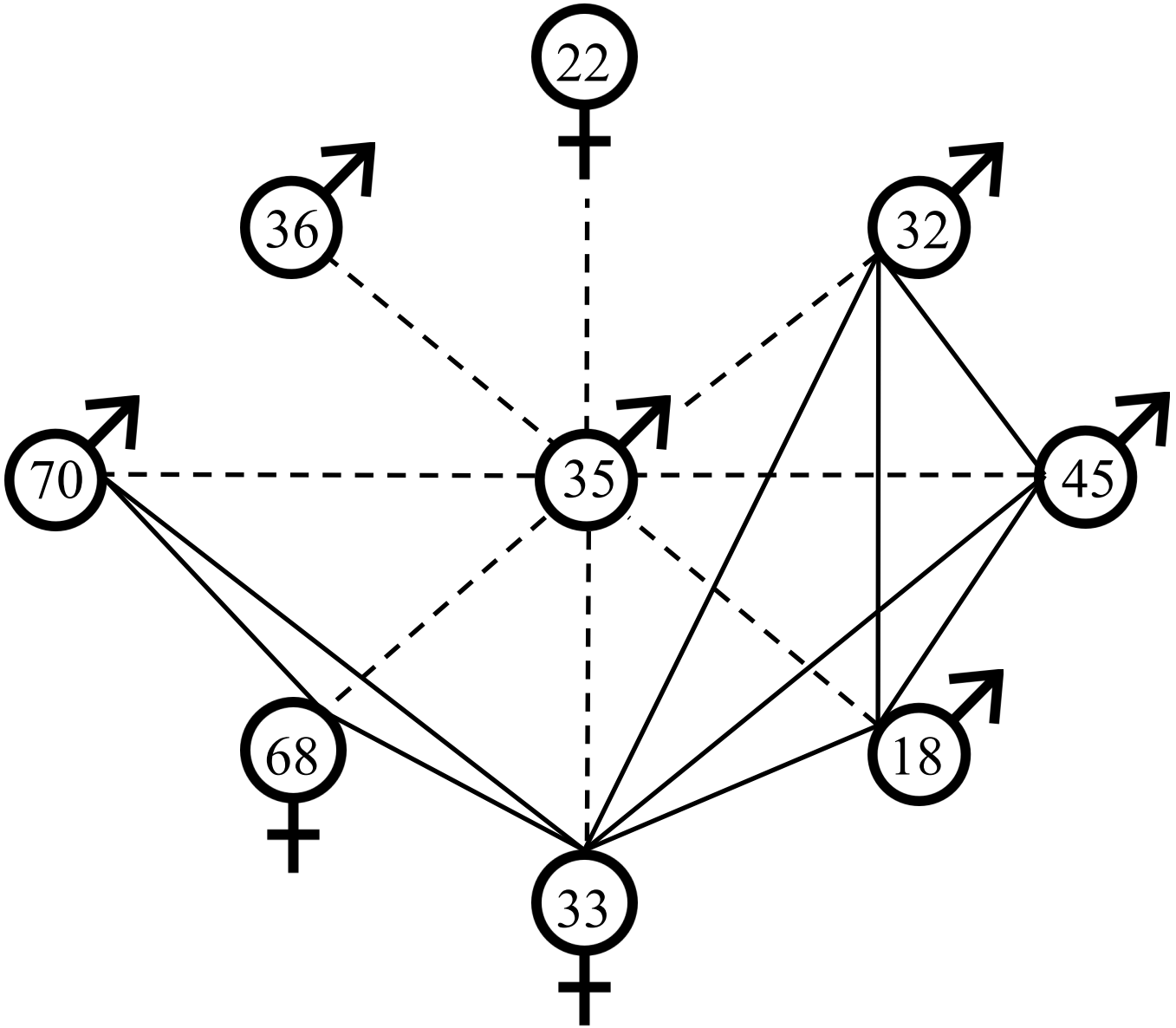
Linear regression model of sqrt network size

Effects	Coefficient	St.-Error	t-value
Intercept	4.890	0.234	20.920
Continous effects			
People in household [number]	0.084	0.030	2.727
First residents in course of live [number]	0.027	0.013	2.018
Cliques in network (w/o isolates) [number]	0.196	0.015	13.040
Density in network [share]	-0.815	0.236	-3.461
Degree of centralization in network [share]	-0.902	0.303	-2.978
Share of strong ties [share]	-0.012	0.002	-7.628
Share of alters with ego‘s sex [share]	-0.010	0.002	-4.084
Dummy effects			
HH Income (< 8‘000 CHF/month)	-0.364	0.101	-3.609
HH Income (> 8‘001 & < 12‘000 CHF/month)	-0.268	0.097	-2.775
df			537
R^2			0.392

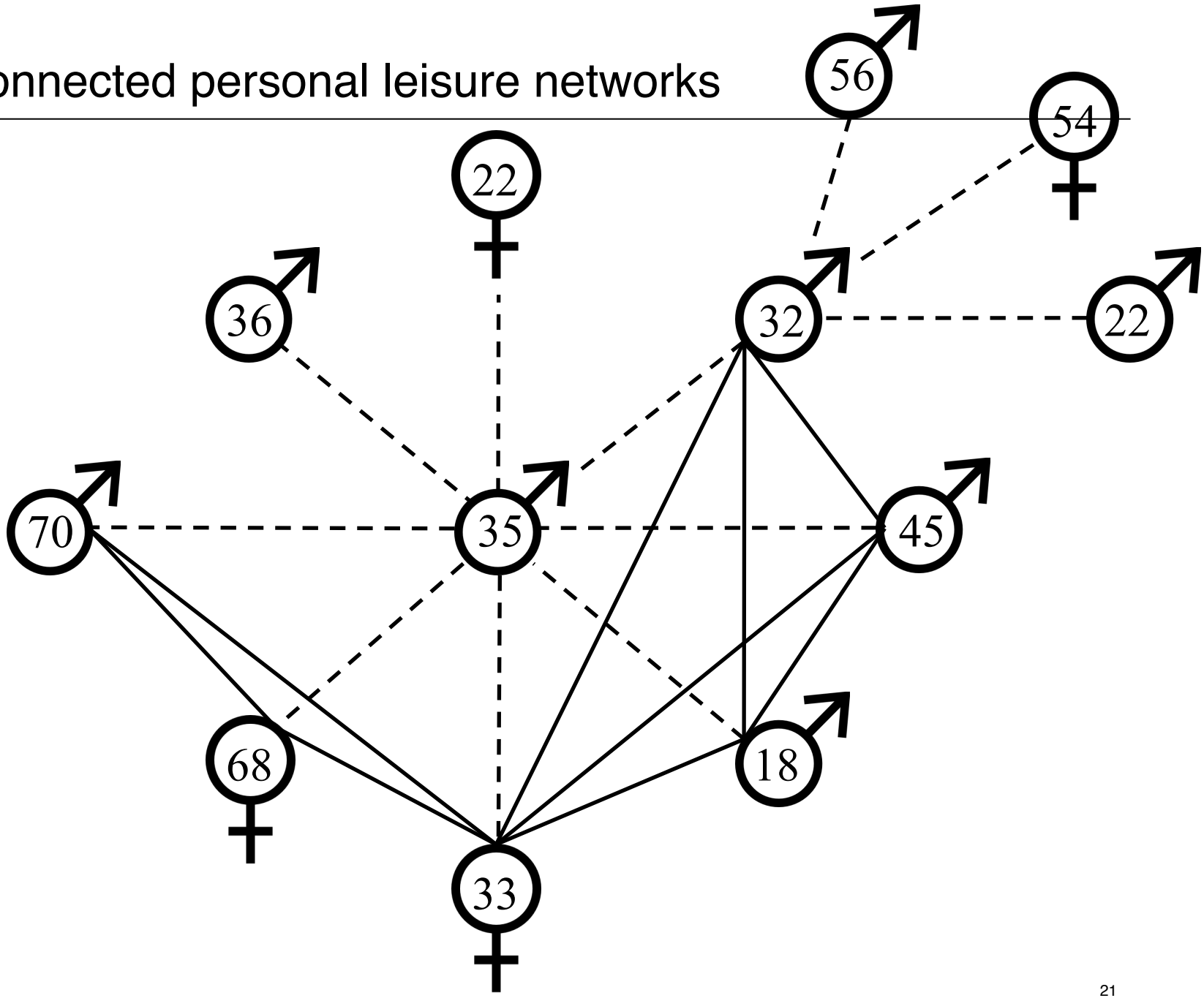
Multilevel logistic regression model on tie strength

Effects	Coefficient	t-value	Odd ratios
Threshold	3.031	10.445	
Continous effects on level 1			
Relation duration [years]	0.054	12.712	1.055
Face-to-face contacts [year]	0.007	4.339	1.007
ICT contacts [year]	0.013	11.570	1.013
Dummy effects on Level 1			
Sex homophily [y/n]	0.236	2.895	1.266
Alter is a kin contact [y/n]	0.758	5.760	2.135
Continous effects on level 2			
Children in houesehold [number]	0.342	3.784	
Network size [number of alters]	-0.028	-2.946	
Residual variance	2.470	0.000	

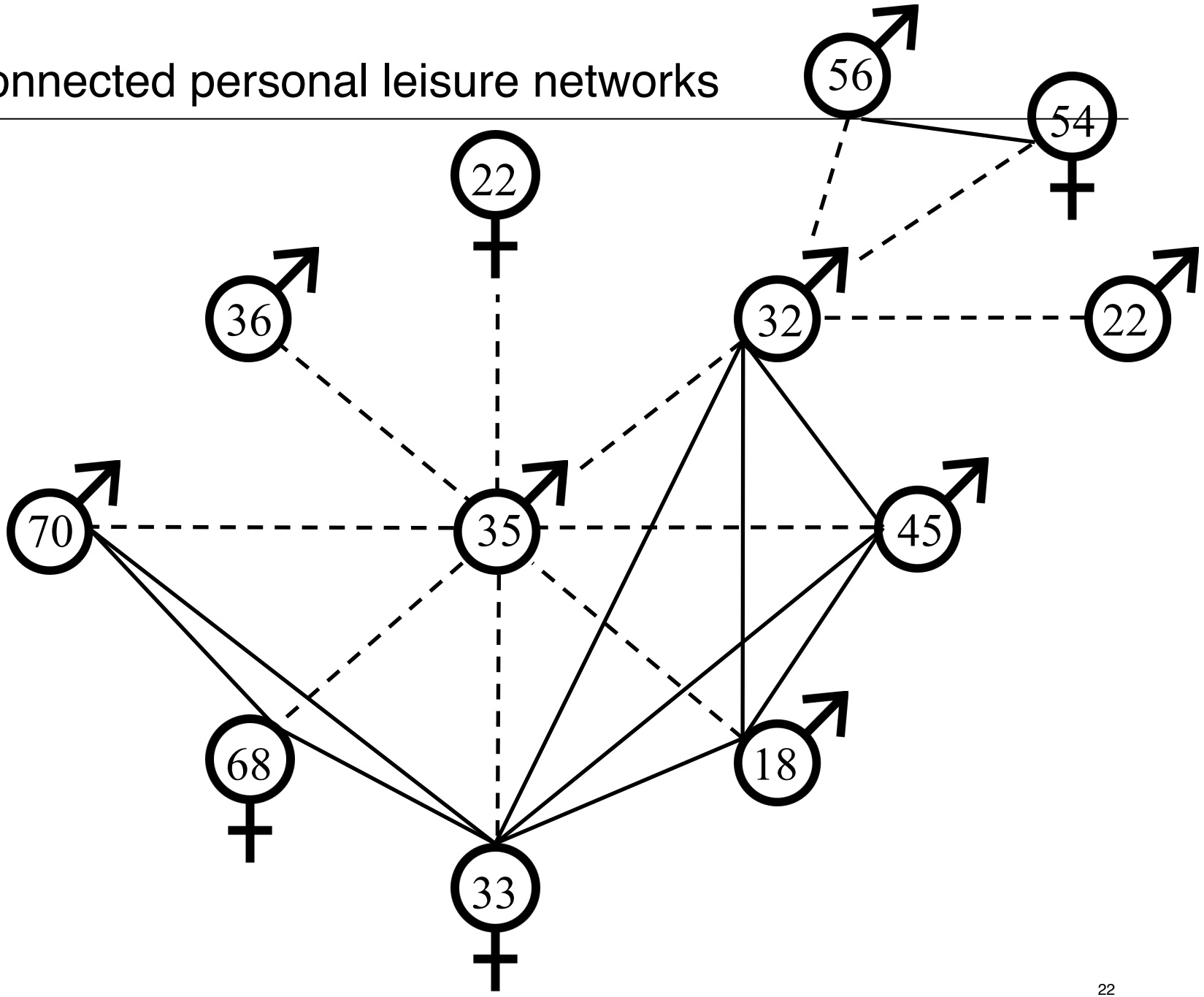
Connected personal leisure networks



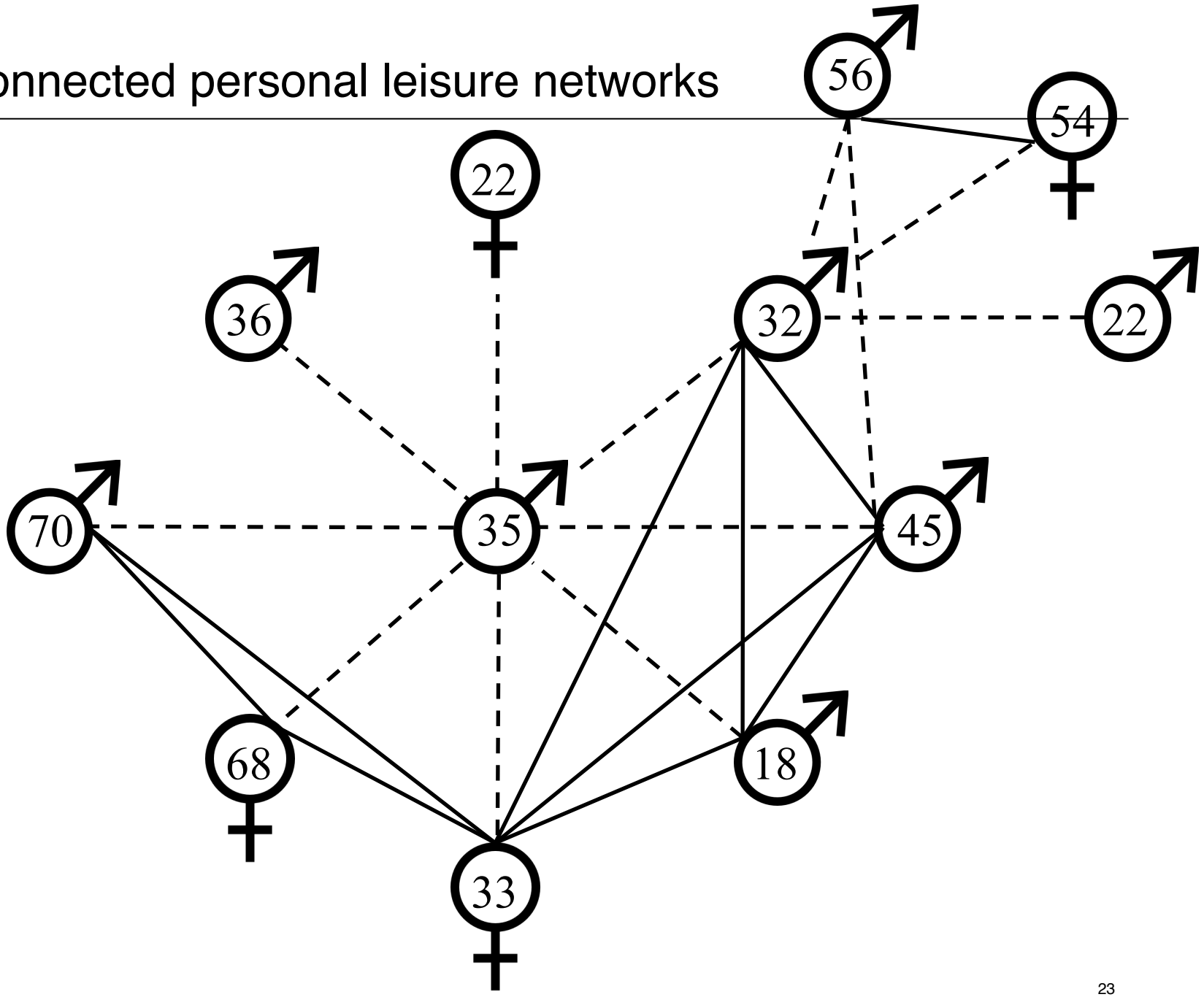
Connected personal leisure networks



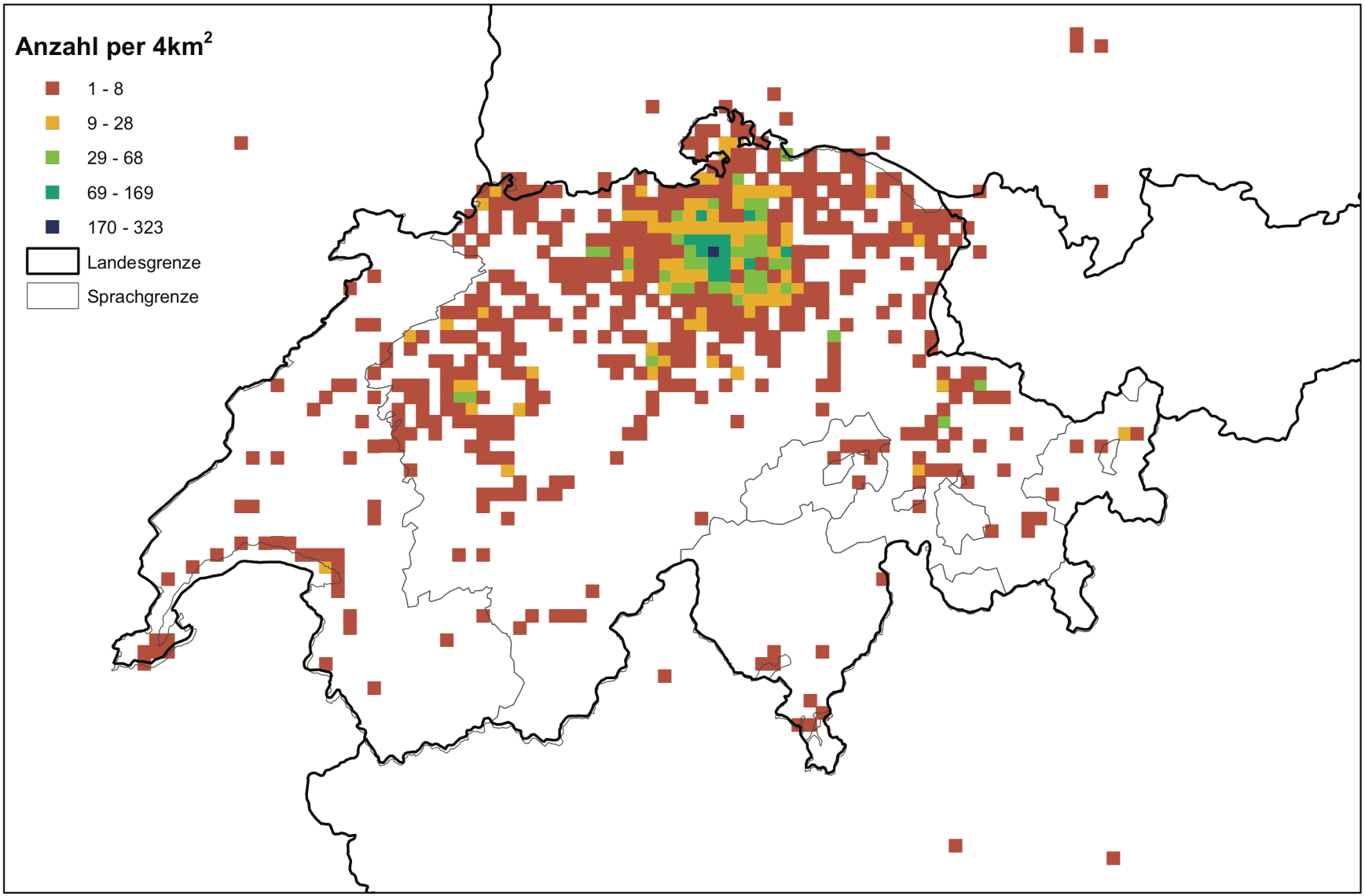
Connected personal leisure networks



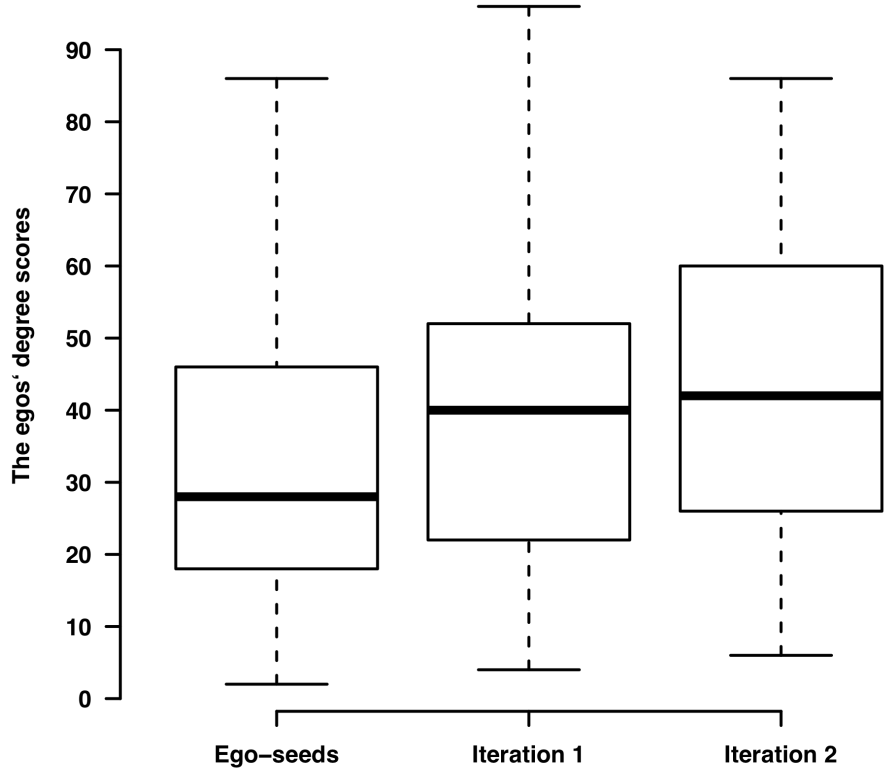
Connected personal leisure networks



Connected personal leisure networks



Behind egos' horizons: The connected 'snowball'-graph



	Vertices	Edges	Density	Components	Tringles
Without sociogram	6'584	7'349	0.000	19	0.017
With sociogram	6'584	32'671	0.002	19	0.518

Behind egos' horizons: The connected 'snowball'-graph

	Vertices	Edges	Density	Components	Tringles
Without sociogram	6'584	7'349	0.000	19	0.017
With sociogram	6'584	32'671	0.002	19	0.518

Outlook

Fieldwork:

- Await decision of federal commissioner for data protection
- Finish ‚Small world experiment', collect data on iteration 4
- Finish field work by end of 2011

Analysis:

- Focus on snowball characteristics
- Analyse diary data (places for joint activities)