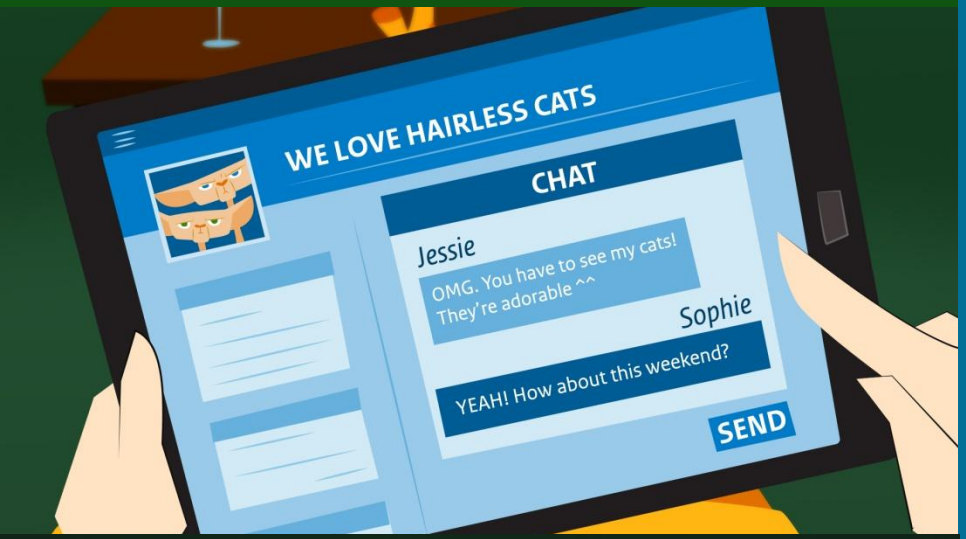
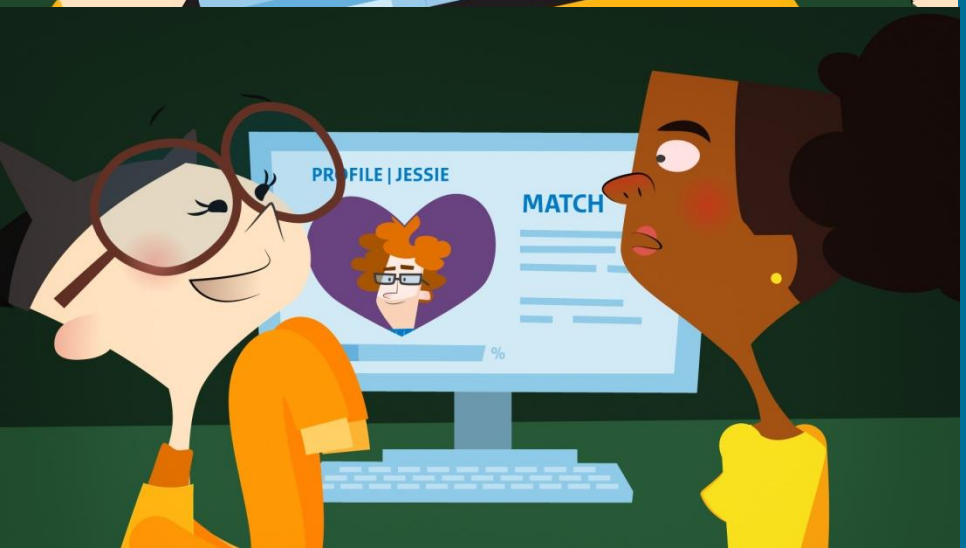




KiM Netherlands Institute for Transport Policy Analysis

Leisure mobility in the internet age

A first exploration of the Netherlands Mobility Panel data

Sascha Hoogendoorn, George Gelauff, Eline Scheepers, Nina Schaap

IATBR 2015, London

July 21, 2015

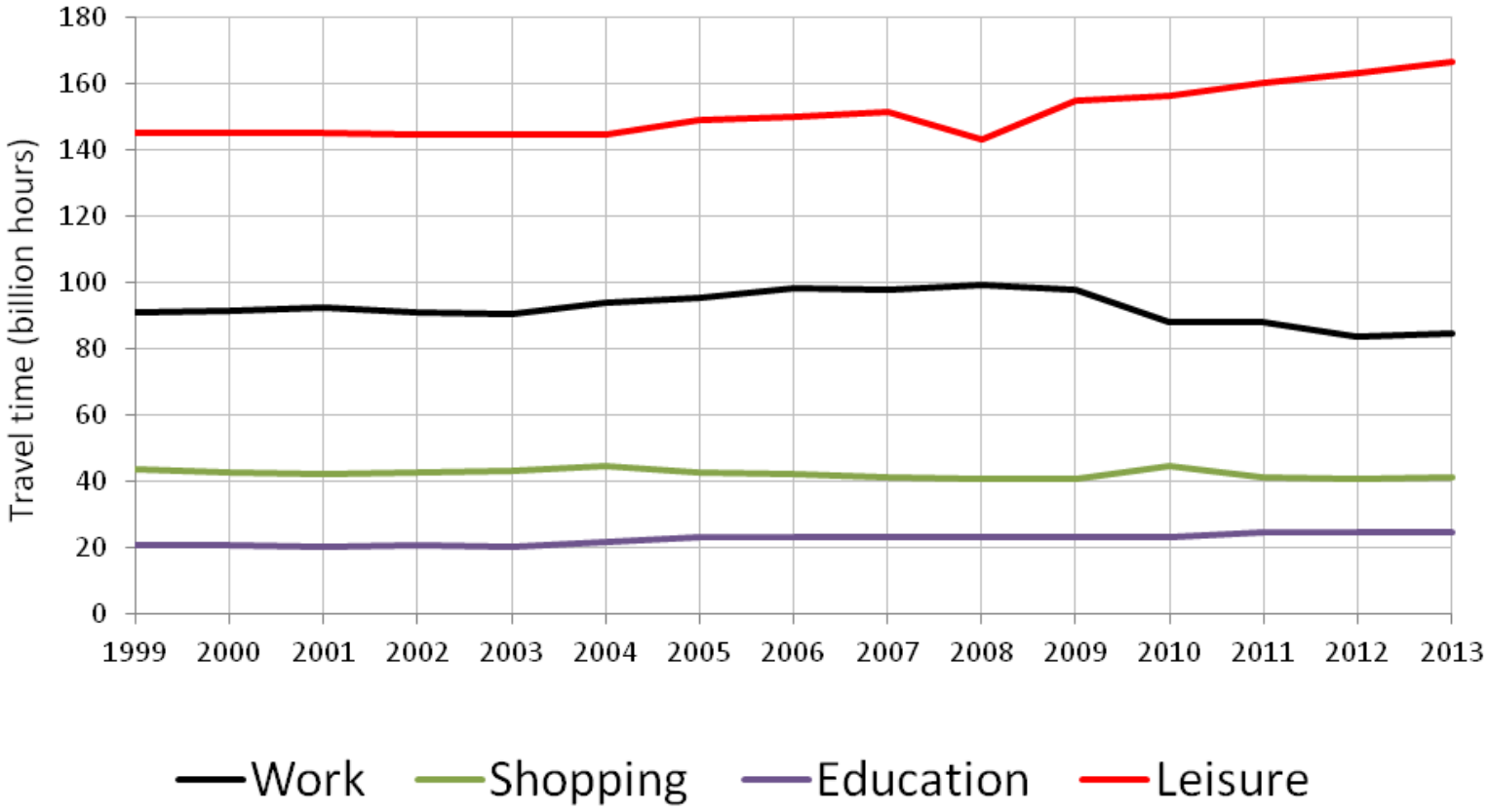
Outline

- Internet and leisure mobility
  - Impressions from the literature
- Netherlands Mobility Panel
  - Main characteristics
  - Suppositions: internet and mobility
- Regression leisure travel distance
  - model selection
  - internet applications

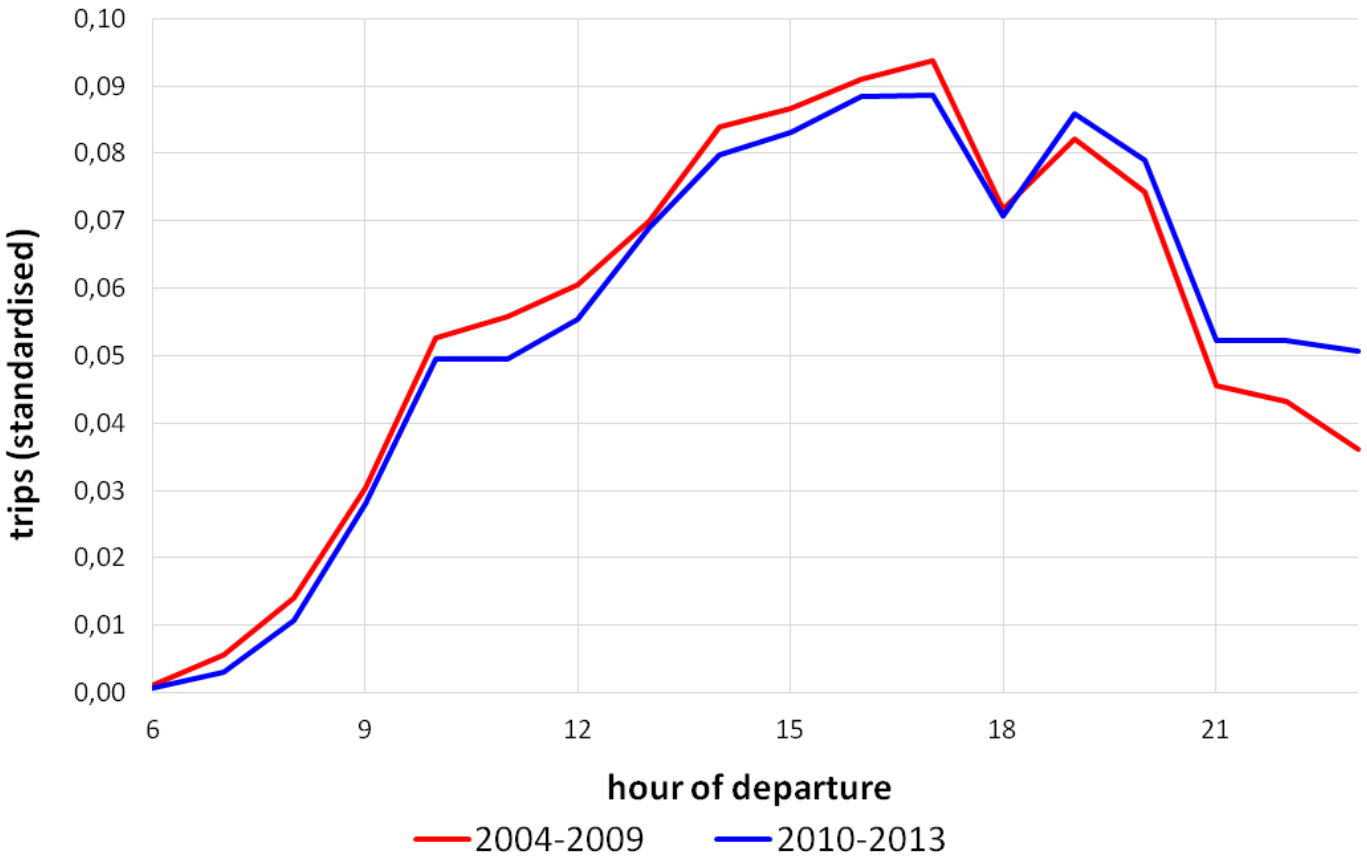
Internet and leisure mobility

- Theory
  - Substitution: video chat replaces visit
  - Complementarity: easy to find friends and meet somewhere
    - occasionally far away
- Impressions from the literature
  - Strong growth of social internet applications and internet contacts
  - Leisure time nearly constant since 1975: 47 hours / week
  - Face-to-face contact time falls, yet already before internet
    - 11 hours / week in 1975, less than 6 hours in 2011
  - Most internet contacts remain virtual
  - Most social media interaction with current friends
  - Weak evidence: ICT raises rather than restricts mobility

Travel time by travel purpose, 1999 – 2013



Time of departure for visiting (standardized)



Netherlands Mobility Panel (MPN)

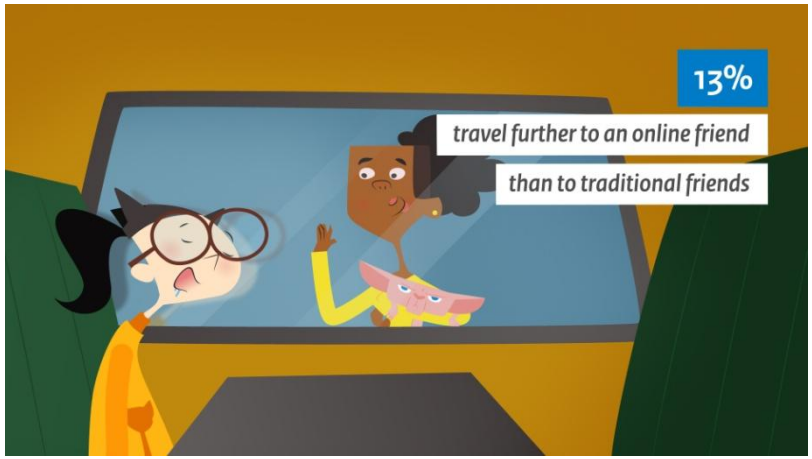
- State-of-the-art household panel
  - Dynamics in travel behaviour of individuals and households
  - Changes in personal and household characteristics
  - Changes in other travel-related factors (*e.g.* economic crisis, ICT)
- Main characteristics
  - 2000 complete households and 4400 respondents
  - Funding for 2013-2016, 1 wave per year
  - Online screening, household and individual questionnaires
  - Three-day online travel diary
  - Household members 12+
  - September till November (except fall holidays)
  - Stratified sample drawn from existing access panel

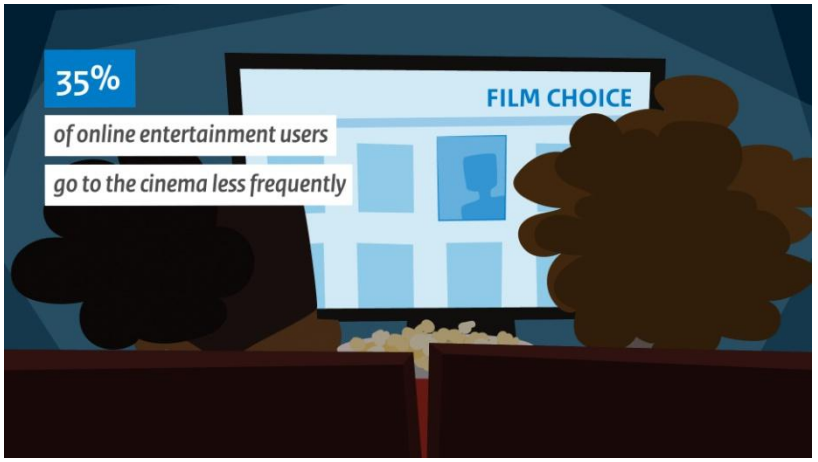
Research instruments

Research instrument	What?
Screening questionnaire	• willingness to participate • travel data for the non-response analysis
Household questionnaire	• composition of household, main wage-earner, annual gross household income • ownership of desktop computers and laptops • transport vehicles owned by a household, car details , car parking possibilities
Individual questionnaire	• age, gender, monthly salary, working hours, type of work, workplace • respondent's motherland, their father's and mother's • travel costs subsidies, driving licence, travel cards • transport vehicle availability, preferred mode of transport • valuation of transport facilities and traffic conditions in the neighbourhood • access to, and use of, Internet applications
Additional individual questionnaire	• <u>even</u> years: preferences towards car ownership and use, environment, economy and housing location • <u>uneven</u> years: impact of ICT use on mobility for working and shopping, and the impact of social media on social networks and on mobility for social activities
Travel diary	• addresses of visited locations and main activities • Trips: departure and arrival times, order in which transport modes were used, distances covered, parking costs, delays and travel companion

Special topic suppositions: internet and mobility

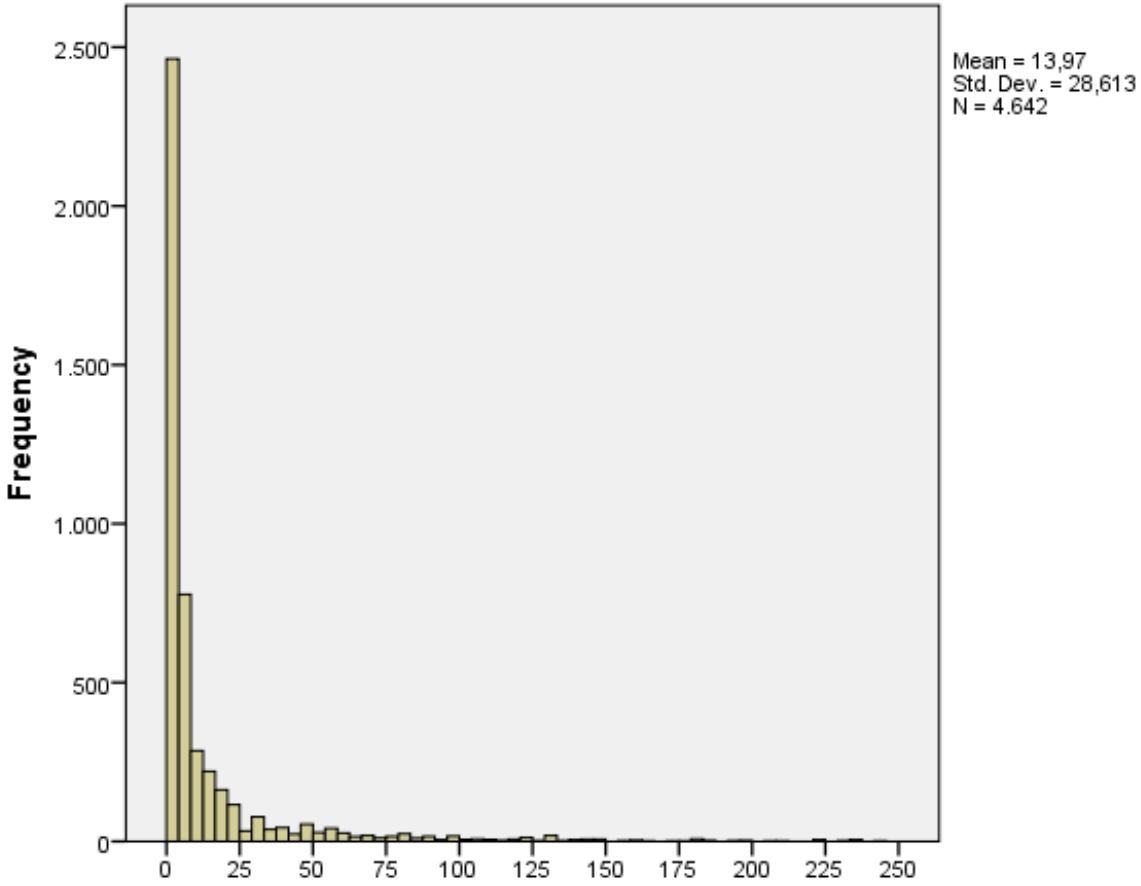
- Got to know new people: 31%
- Developed new friendships: 8%
- Met more often: 28%



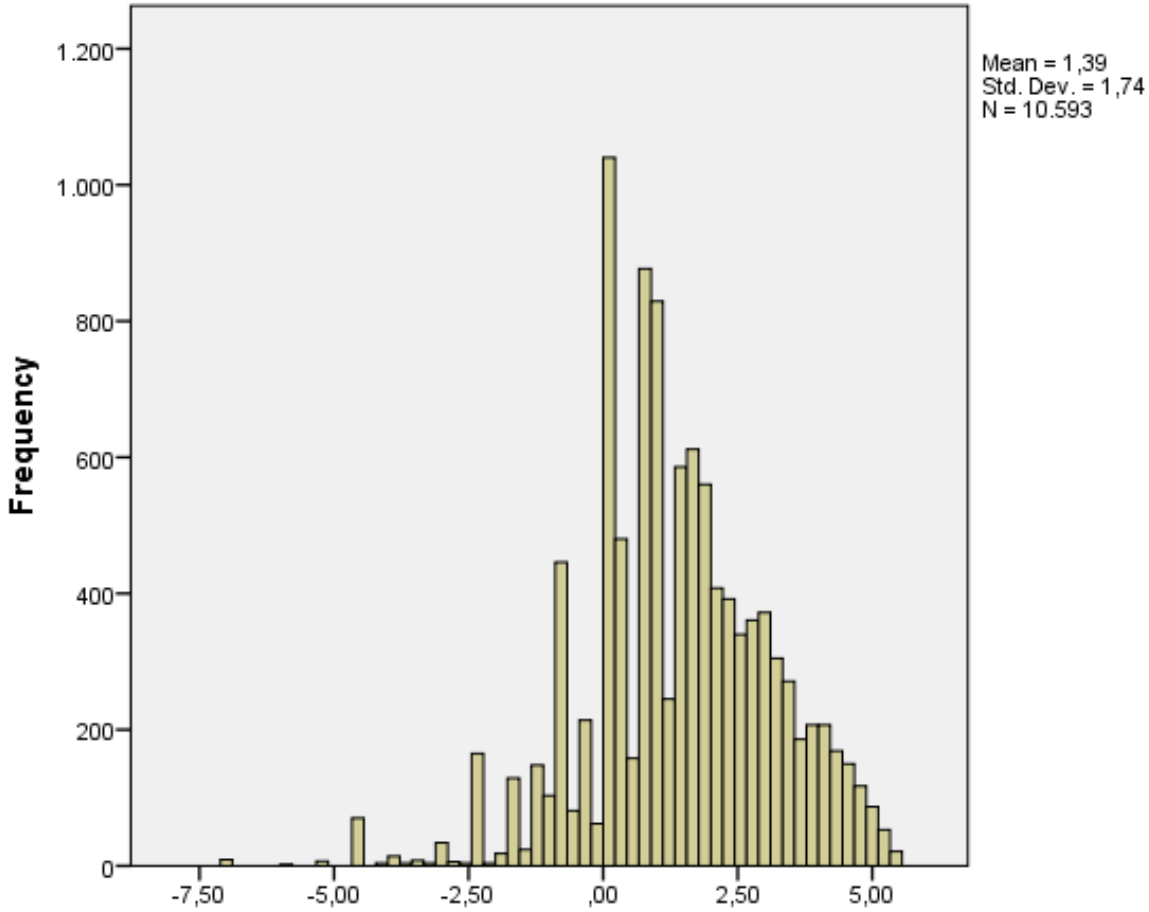


- People met online
  - live closer than my current friends: 12%
  - live further away than my current friends: 33%

MPN data analysis: leisure travel distance (kms)



Log leisure travel distance



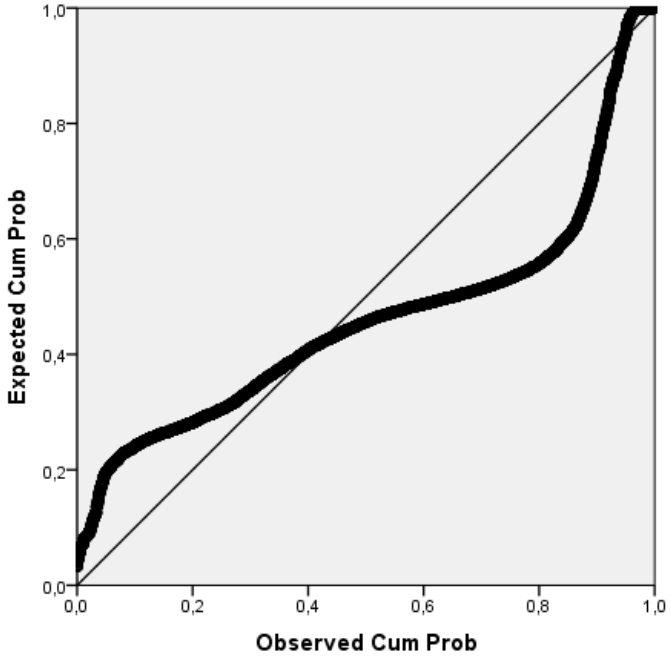
Regression on leisure travel distance

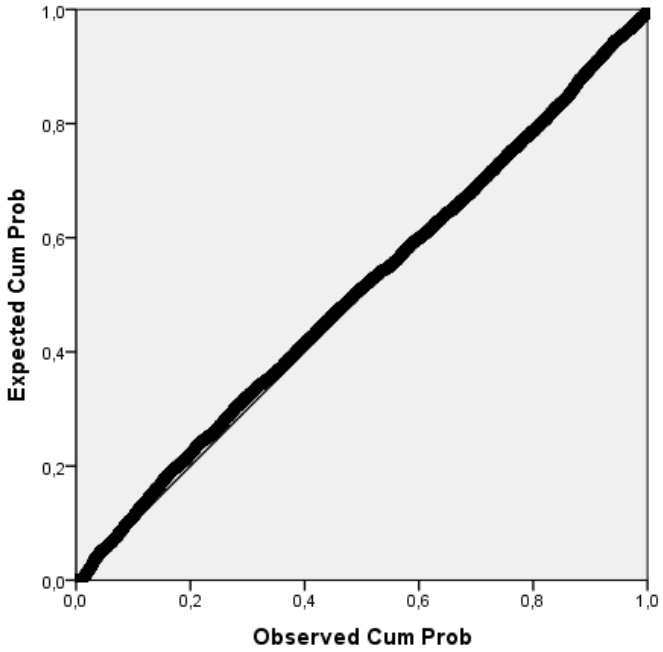
	Linear model		Log - Linear model	
	Coefficient	Standard error	Coefficient	Standard error
(Constant)	16.570	2.104	1.882	.103
Public transport	22.868	.956	.935	.047
Bike	-15.972	.709	-1.357	.035
Walking	-17.311	.649	-2.466	.032
Gender	-.694	.559	.060	.027
Age	-.938	.181	-.038	.009
Education	1.361	.412	.093	.020
Income	.393	.177	.018	.009
children <12 years in hh	-1.281	.862	-.158	.042
number of cars in hh	-.404	.507	.089	.025
Urbanity	.018	.320	-.017	.016
HH composition	-1.000	.410	-.047	.020
Working hours	-.608	.347	-.030	.017
Immigrant	.828	.928	.080	.045
Card for public transport	3.004	.627	.177	.031
Driver's license	6.880	.932	.199	.046

Significance 1% 5% 10%

Goodness of fit

	Linear model	Log – linear model
R	.455	.681
R square	.207	.464

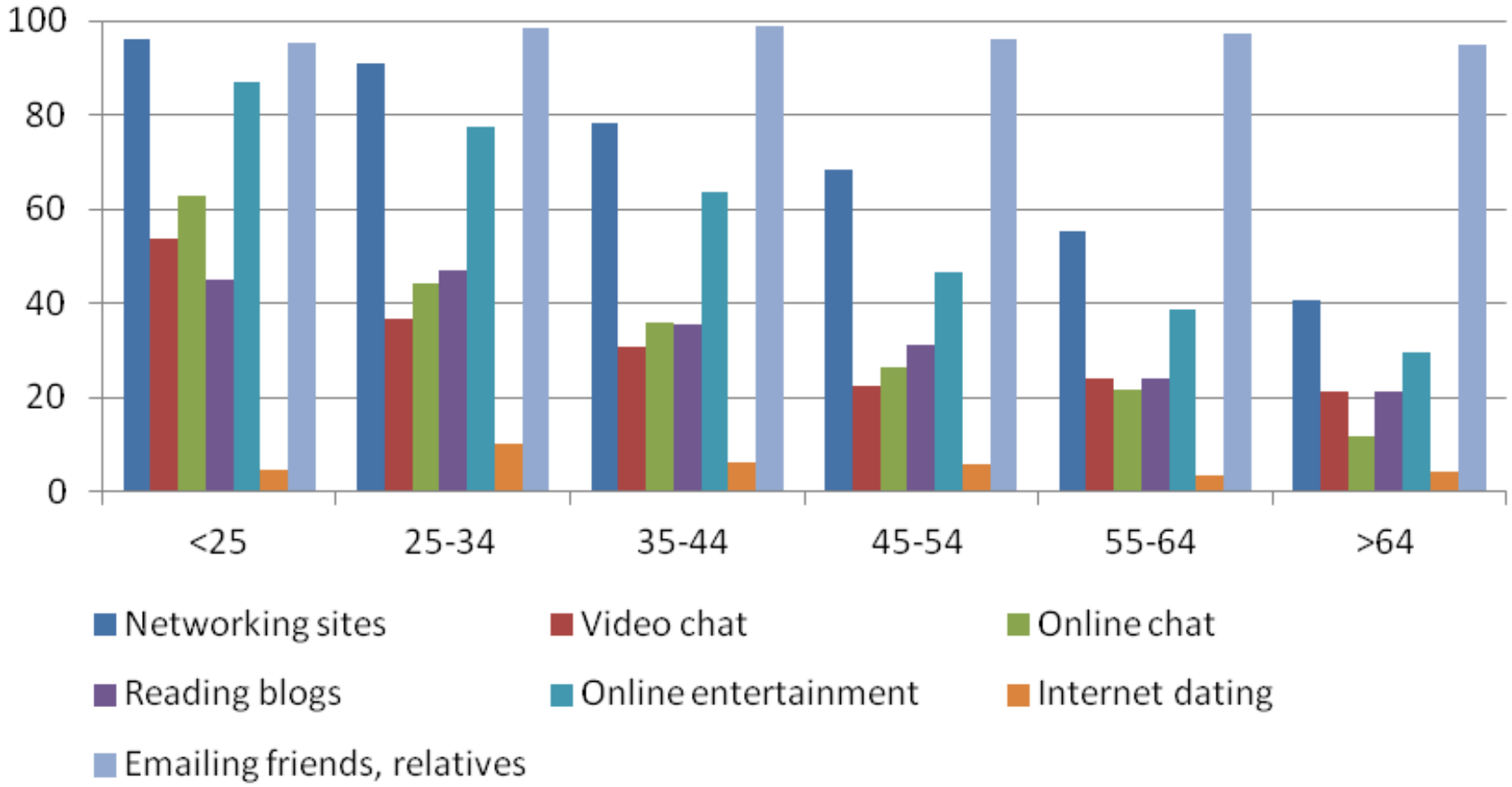




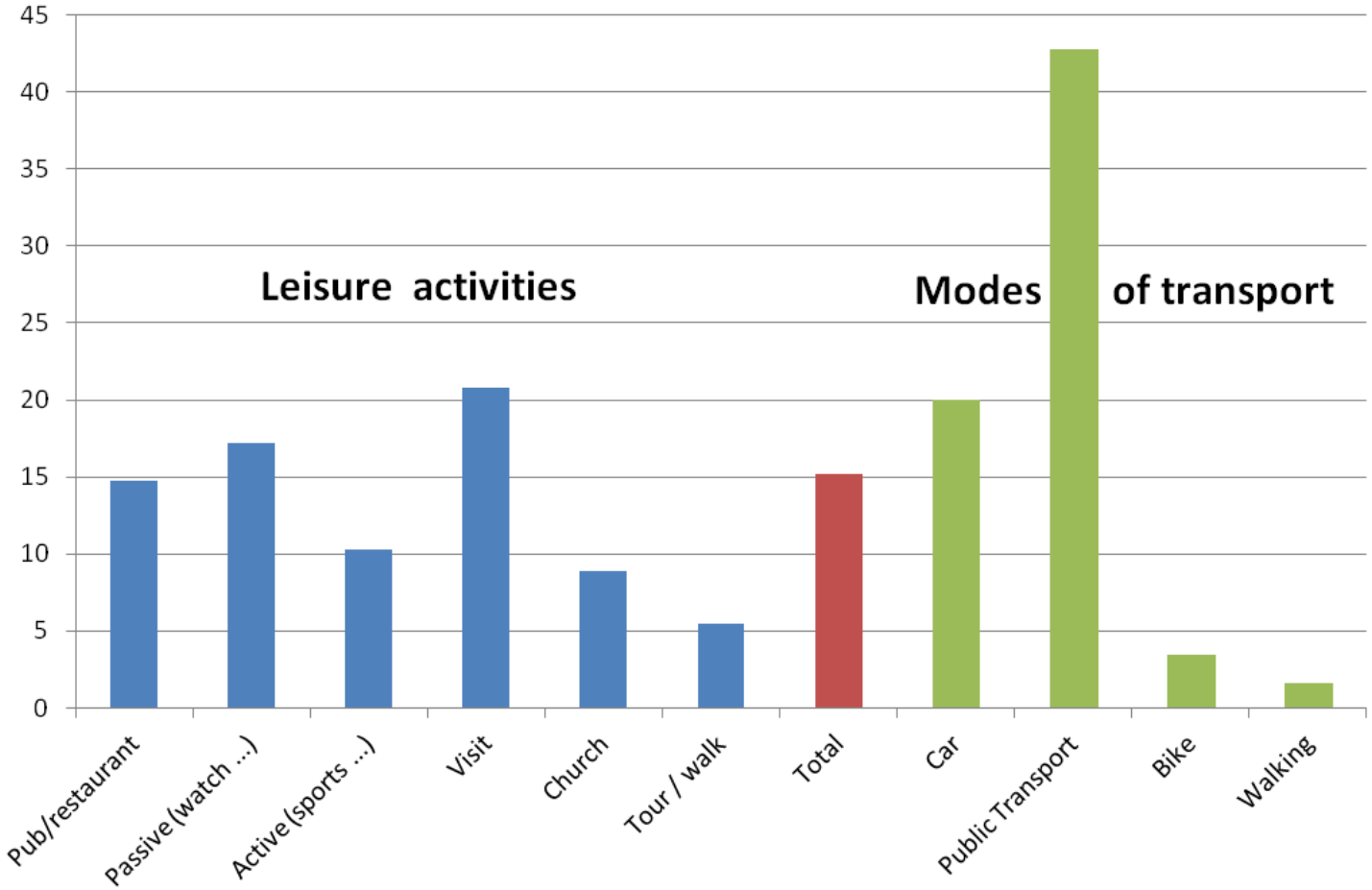
How often do you use the internet for?

Number of days	<1	1 or 2	1 to 3	1 to 3	>3
Per	quarter	quarter	month	week	week
Networking sites	31.7	1.8	5.5	13.4	47.5
Video chat	71.3	7.1	9.9	6.8	5.0
Online chat	69.7	5.3	4.9	7.7	12.3
Reading blogs	67.5	9.9	8.8	8.5	5.3
Online entertainment	46.6	9.7	12.6	15.7	15.3
Internet dating	94.3	1.4	1.3	1.8	1.2
E-mailing friends, relatives	2.9	2.5	5.4	21.4	67.7
Coded: days / quarter	0	1.5	6	26	71.5

Internet activity by age (%, ≥ one day / quarter)



Average leisure travel distance (kms)



Regression log leisure travel distance

	All purposes	Pub / restaurant	Sports passive	Sports active	Visit	Church	Tour / walk
Networking sites	.000	.001	-.001	.002	-.001	-.001	-.002
Video chat	.001	-.001	.000	-.001	.003	-.001	-.004
Online chat	.000	.002	.003	-.002	-.001	.007	-.001
Reading blogs	.001	.004	.001	-.001	.001	.011	-.002
Online games	.000	.001	.003	-.001	-.001	-.006	.000
Internet dating	.001	.010	-.001	-.005	.006	.000	.001
E-mailing friends	.000	.000	.000	-.001	.000	-.002	.003
				1 extra day video chat <> 0.3% longer distance			
R2	.464	.482	.547	.468	.529	.475	.301
R2, controls only	.464	.478	.544	.463	.527	.458	.294
N	10593	1143	1021	2138	4196	498	1597

Significance 1% 5% 10%

Sample partition alternatives

- Age groups
  - Internet activity heterogeneity
- Transport modes
  - Distance heterogeneity and endogeneity

- Results for both partitions
  - Small number of significant coefficients with varying signs
  - Very limited increase in explanatory power

- No impact found of internet applications on leisure travel distance

Conclusion: Internet and leisure mobility

- Theory
  - substitution, complementarity
- Literature and data impressions
  - Limited impact of internet on mobility, if any
  - Leisure related travel time slightly rises over time
- MPN respondent's perception
  - moderate, partly offsetting effects on leisure activity
- Leisure travel distance regression
  - No impact found of internet applications

Future research steps

- Special topic analysis
  - from internet applications to purpose of internet use
    - f.i. meeting new people,
    - knowing friends' location,
    - ease of communication, etc
  - factor and cluster analysis to purpose of internet use
    - as input to regression

- Second wave almost available
  - differences in internet use -- differences in travel behaviour