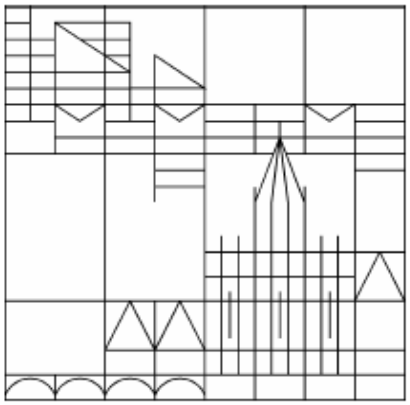

Diffusion of a Social Movement

The Example of the German Local Exchange Schemes

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Local Exchange Trading Systems: History

- First Founding 1983 in British Columbia, Canada, by Michael Linton
  - reaction to high unemployment

- System's Spreading
  - 1984
    - presentation of the conception at „The Other Economic Summit" in Great Britain by Michael Linton
  - 1985
    - founding of first Local Exchange System in Great Britain in Norwich
  - late 1980ies/early 1990ies
    - spread of the system throughout all industrialized English-speaking countries
  - early 1990ies
    - spread of the system throughout more western industrialized countries (Finland, Sweden, Norway, Spain, France, Italy, Netherlands, Swiss, Germany, etc.)
- Systems' Design
  - similar structure of the systems along the lines of the Canadian predecessor
    - apart from regional variations regarding currency, membership profile, trading volume

Local Exchange Trading Systems: History

- First German Exchange System
  - founded 1988 in Wolfenbüttel
- Founders
  - activist of the local protestant church
- Impact on founding
  - movie about complementary economies screened at a family center of the church
- Further spreading
  - support of charity or church organizations continued in the formation process of German local exchange systems
  - contrary to formation process of local exchange systems in English speaking countries
  - mirrors strong corporatist orientation of Germany

Objectives of the Study

- Objective:
  - analyze the diffusion process and the patterns of diffusion of Local Exchange Systems in Germany
  - focus on contagious effects and density dependence

- Research Questions:
  - What patterns of diffusion were given?
  - What caused the diffusion of the systems in Germany?
  - Which role played the political entrepreneurs/agitators in the Exchange Systems' spreading?

Exchange Systems as Social Movements

- Social movements
  - emerge out of a collective discontent with current situation of living
  - hope to achieve improvements by collective actions
  - making demands for change publicly visible

  Social movements as "networks of informal interactions between a plurality of individuals, groups, or associations, engaged in a political or cultural conflict, on the basis of a shared collective identity." (Diani 1992)

  - three dimensions
    - clear conflictual orientation: social/political opponents
    - dense inter-organizational networking
    - linked by solidarities and shared identities

- Collective identity
  - framing for communicating and justifying the movements' objectives, interests and tasks to the movement's participants and environment

Exchange Systems as Social Movements

- Common and directive objectives of the Exchange Systems
  - draw attention on societal failures and resolve them on local levels
    - improving the condition of living of underprivileged people
    - against globalization and its consequences
    - sustainable and local economy

- Collective identity of the Local Exchange Systems
  - strong ideological orientation
  - early systems emerged in green alternative milieu
  - systems' tendency of "othering"

Process of Diffusion

- Before a social movement has become established
  - choice situation of adoption highly ambiguous
  - success and consequences difficult to assess
  - direct and social costs unknown

- Adoptive behavior
  - cautiousness in approaching novelty
  - increasing familiarity of innovation ⇨ reduced perception of risk
  - facilitating adoptive behavior ⇨ s-shaped curve of adoption (e.g. Rogers 1995)
    - early phases: rate of growth rather slow
    - than rapidly increasing
    - saturation point: leveling out

Adoption of Local Exchange Systems

- highly ambiguous situation before system's establishment
  - benefits of joining the movement difficult to predict
    - societal culture: belief systems, cultural traditionalism, social acceptance
    - social costs: tax laws, social welfare fees, illicit work

- cautiousness in approaching Local Exchange Systems
  - slow rate of growth of Local Exchange Systems
  - increasing rate of adoption with increasing familiarity
    - 7 active systems in 1992
    - 200 active systems in 2000
    - 300 active systems in 2005

Contagious Effects and Spatial Proximity

- Relevance of Networks (e.g. Hedström 1994)
  - familiarity with the outcome of an innovation: information
  - individuals behavior influenced by actual past behavior of other individuals
  - observing the outcomes of other actors: signals to outsider
  - imitation, i.e. learning from experiences of others, highly rational form of decision making when relation between means and ends difficult to assess
  - adoption as network based decision
  - proximity enhances spread of information and facilitates imitation
    - density of social ties
    - mutual awareness and interdependence
    - frequency of communication
    - nature of interaction

- Timing
  - gradually more and better information available
  - declining effects of influence

Mesolevel-Networks and Contagious Effects

- Importance of political entrepreneurs (e.g. Hedström/Sandell/Stern 2000)
  - persuasion by charismatic leaders: intentional form of social influence
  - unintended by-product of agitation/traveling: mesolevel network
  - political entrepreneurs as broker/intermediaries
    - carrying information between otherwise disconnected regions
    - linking remote areas to one another by these information ties
    - edges reduce distances between the areas lying in-between the linked districts
  - consequences of mesolevel network
    - reduction of average geodesic distance between actors in the whole diffusion space
    - increasing speed of the diffusion process
- Timing
  - gradually decreasing ambiguity of choice situation
  - declining effects of visit by agitators

Media

- Alternative channel of diffusion (e.g. Andrews/Biggs 2006)
  - dissemination of information directly to potential adopters
  - information reaching broad audience
  - especially suited for loosely connected, large organizational networks

- Innovations with public consequences
  - popular, well-defined societal issues
  - media support role of institutionalization
  - generate knowledge and attention

- BUT
  - persuasion to adopt innovation depends on interpersonal communication
  - complementary not competitive relation with interpersonal communication

Density-Dependence

- Founding of new organizational forms (e.g. Hannan/Carroll 1992)
  - founding rates depend on population density
  - organizations of same population linked through processes of legitimation and competition
- Legitimation
  - relevant for resource mobilization
  - taken-for-granted: natural way of performing collective actions
  - legitimation increases with population density
- Competition
  - increasing population density: increasing competition
  - narrowing niche of relevant resources for founding
- Process of diffusion
  - founding rates: inverted u-shaped relationship of founding rate and density
    - at lower density: new organizations increasing legitimation
    - at higher density: new organizations increasing competition

Hypothesis

H1: The founding of a local exchange system is positively related to the existence of other systems in nearby regions.

H2: The founding of a local exchange system is positively influenced by the visit of an agitator/political entrepreneur.

H3: Both effects should decline with the passage of time.

H4: Media reports will force the founding rate of local exchange system.

H5: The founding rate of local exchange systems is negatively related to the population density.

Methodology

- Data for analysis
  - Standardized telephone survey of all German systems (total sample)
  - problem: definition of population
    - no compulsory registration as businesses
    - no official address register
    - voluntary address lists of diverse actuality
  - Database
    - match of all lists available, removing doublets
    - implementation of snowball technique
  - Information
    - systems' names
    - geographic location
    - date of birth/death

Methodology

- Data for analysis
  - Information about media coverage
    - investigations in archives of supra regional news papers focusing on articles about exchange systems
    - Der Spiegel; Die Welt, Die Zeit; Fokus; Stern; SZ (Süddeutsche Zeitung); TAZ (Die Tageszeitung)
  - Information concerning districts
    - number of exchange systems per year
    - number of exchange systems in neighboring districts per year and one year lagged (contagious/spatial effects)
    - German-wide population size (density dependence)
    - annual unemployment rate (economic situation)
    - annual district size (urbanization)
    - percent voting green party in “Landtagswahlen” (ideological component)

Methodology

- Time of analysis
  - 1988-2005 West Germany: starting with first known system
  - 1995-2005 East Germany
    - data restrictions due to area re-definitions
    - delayed founding activity
- Unit of analysis
  - all German districts (Landkreise and kreisfreie Städte)
  - total of 439 districts
- Used method:
  - event history models
    - discrete time approach: data available on annual basis only
    - focus on point of time of first exchange system's formation within a district and correlating this event with the covariates
      - activity in other districts
      - population density
      - district specific variables

Methodology

- Model:
  - duration model for grouped survival data following Prentice and Gloeckler (1978)
    - semi-parametric model
    - discrete hazard time for district i of switching in time interval j to found a Local Exchange System is given by following function:

$$hj(Xij) = 1 - \exp[-\exp(Xij\beta + \gamma j)]$$

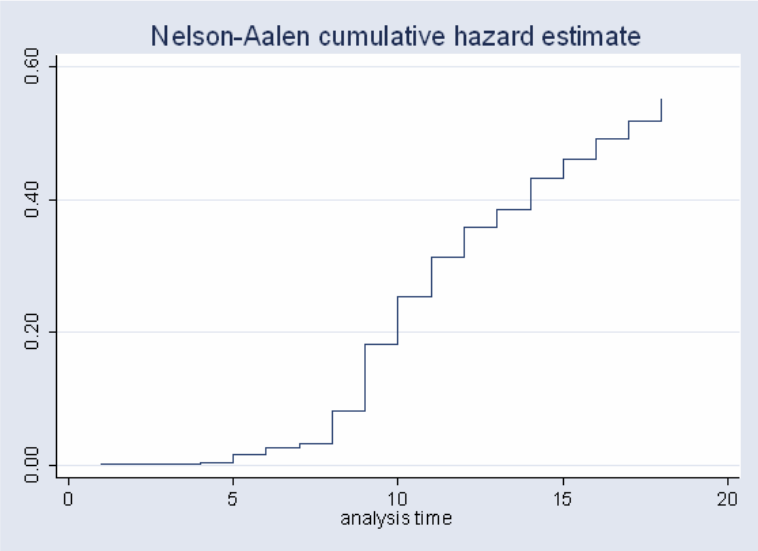
    - separate parameter γi for each spell
    - indicator variable yit: 1 = event occurs during interval, 0 = otherwise

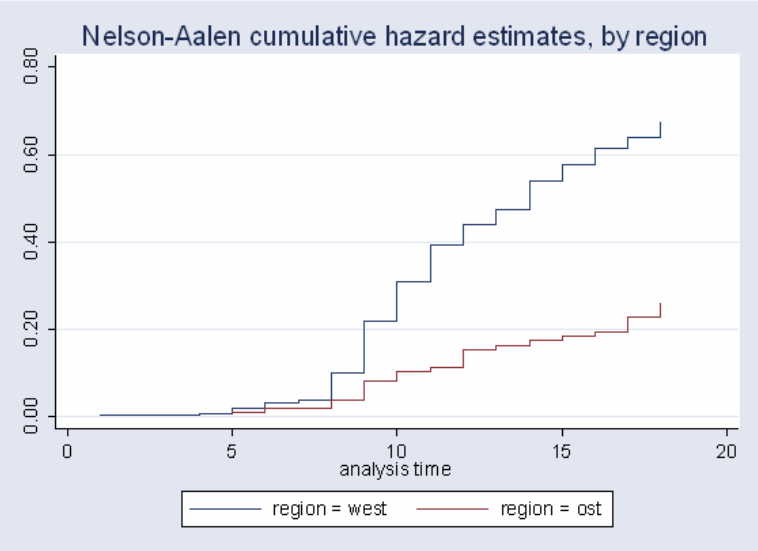
$$\log L = \sum_{I=1}^{n} \sum_{j=1}^{ti} \{yij \log hj(Xij) + (1 - yij) \log[1 - hj(Xij)]\}$$

- Organizing data:
  - changing units from districts to “district years”
  - for each district as many data rows as time intervals at risk
    - observation of each district ends with formation of the *first* exchange system
    - unbalanced panel data set
  - for 327 districts of West Germany: 4718 observations (1 missing)
  - for 112 districts of East Germany: 1071 observations (3 missings)

Results

- Typical s-shaped curve of diffusion:





  - later start of the process of diffusion in East Germany
  - slower speed of process of diffusion in East Germany
- Possible explanation:
  - shortage in supply as a consequence of the communist regime forced self help and informal exchange among East German people thus no need for an institutionalized form of exchange in East Germany

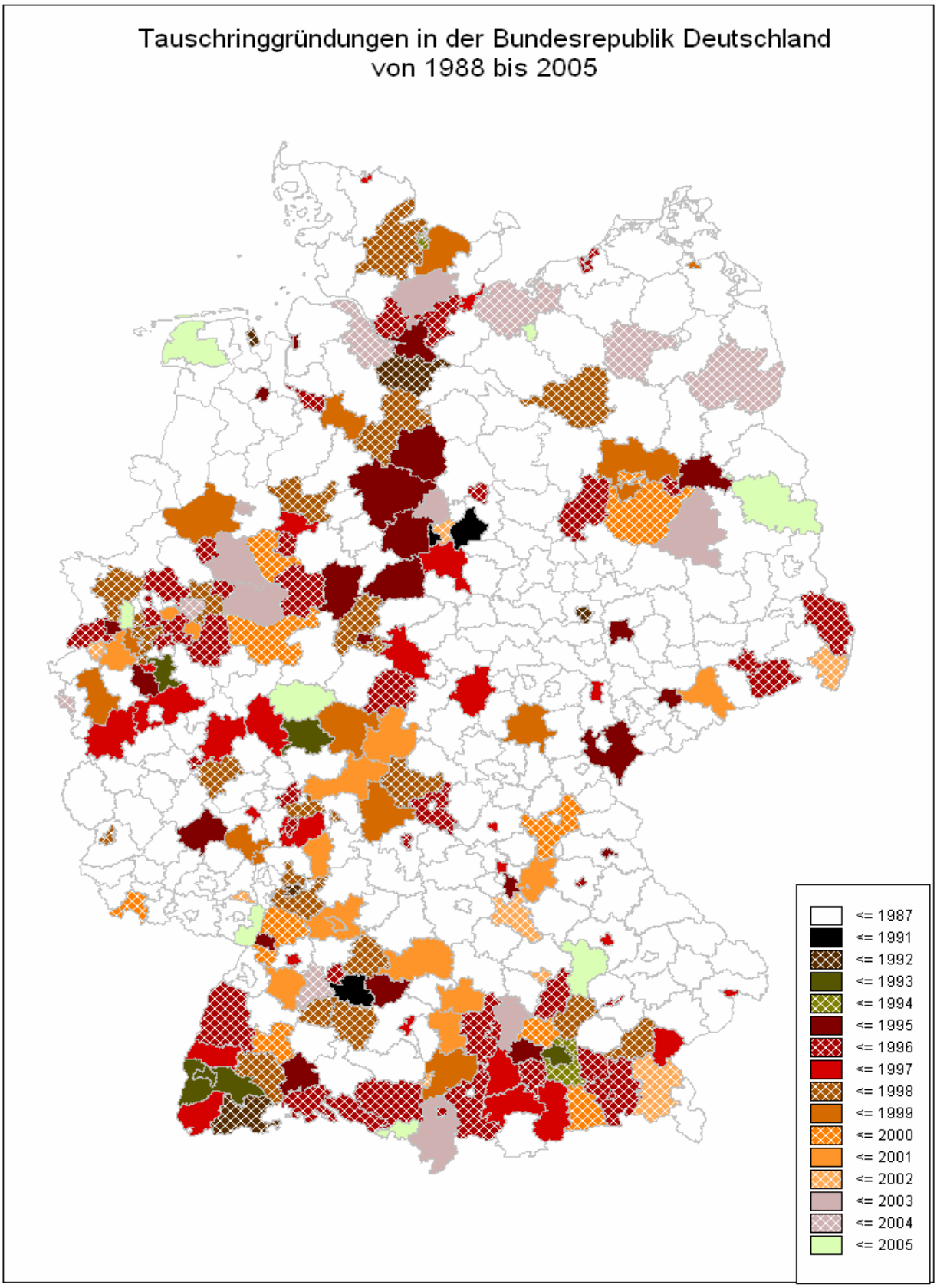
Results

- Cartographical picture of contagion of German landscape with Local Exchange Systems

Formation of Exchange Systems 1988-2005 on district level

- Until 1992 only few Local Exchange Systems
  - primarily in remote rural areas of Northern and South-West Regions of Germany
- Since 1993 movements' spreading
  - concentration on urban areas
- Local Exchange Systems in 2005
  - in 43,3% of all German districts
  - East-West difference
    - more than 50% of West German districts
    - less than 25% of East German districts

Results



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Foundation of first Local Exchange System in West German district

Variable	(1)	(2)	(3)	(4)
Constant	-13.220 (2.172)***	-13.126 (1.984)***	-12.212 (1.877)***	-10.945 (1.681)***
ln time	3.799 (1.079)***	3.639 (0.976)***	3.233 (0.911)***	3.245 (0.923)***
district size/thousand	0.003 (0.001)**	0.003 (0.001)*	0.003 (0.001)**	0.002 (0.001)***
unemployment rate	0.025 (0.051)	0.045 (0.053)	0.030 (0.053)	-0.038 (0.029)
% green party	0.230 (0.047)***	0.238 (0.049)***	0.225 (0.047)***	0.073 (0.021)***
microlevel network lagged		0.145 (0.092)	0.145 (0.090)	0.111 (0.042)**
media lagged			0.081 (0.037)**	0.065 (0.034)*
No. Systems				0.017 (0.007)**
No. Systems²				-0.001 (0.000)***
No. Observations	4718	4718	4718	4718
Log-Likelihood	- 613.884	-612.347	-609.996	-582.930

(***) 1% significance, (**) 5% significance, (*) 10% significance; standard error in brackets

Foundation of first Local Exchange System in East German district

Variable	(1)	(2)[1]	(3)	(4)
Constant	-3.358 (1.447)**	-3.675 (0.144)**	-3.547 (1.514)**	-1.390 (2.017)
ln time	0.031 (0.294)	-0.157 (0.327)	-0.163 (0.325)	3.208 (1.593)**
district size/thousand	0.009 (0.002)***	0.008 (0.002)***	0.008 (0.002)***	0.007 (0.002)***
unemployment rate	-0.091 (0.062)	-0.070 (0.069)	-0.078 (0.073)	-0.061 (0.077)
% green party	0.074 (0.142)	0.118 (0.135)	0.107 (0.142)	0.178 (0.144)
micro-level network-1		0.069 (0.040)*	0.068 (0.040)*	0.064 (0.039)
media-1			0.035 (0.099)	0.009 (0.119)
No. systems				-0.301 (0.180)*
No. systems²				0.001 (0.003)
No. observations	1071	1071	1071	1071
Log-Likelihood	-110.138	-108.826	-108.765	-106.648

[1] simple cloglog modell without gamma-distributed heterogenity due to problems with ML estimation

Results

- Contagious effects:
  - spatial dimension in both parts of Germany for systems' spreading relevant
  - media forces in both parts of Germany systems' growth (east: lack of significance)

- Density dependence:
  - expected effects in West Germany
  - no effects in East Germany
    - critical mass not reached yet to provoke strong competition

- District specific variables:
  - expected effects in West Germany
    - especially ideological orientation
  - effects in East Germany
    - only effect of urbanization
    - little involvement in green politics in East Germany

Discussion

- No quantitative data for testing effects of political entrepreneurs
  - no information about point of time of agitation
  - no information about travel routes of agitators
  - exploring mesolevel-network impossible

- Some qualitative aspects
  - Michael Linton's traveling throughout English-speaking countries
  - formation of Exchange Systems in the North of Bavaria due to traveling of an activist
  - import of the idea to Munich from experiences with Exchange Schemes in Great Britain
  - organizing annual meetings on national level to gain popularity
  - internet resources and data archives concerned with exchange systems for spreading
    - Tauschringarchiv (Klaus Kleffmann)
    - Tauschringportal, etc.

Outlook

- Application of various theories on diffusion of innovations on social movements
  - well suited for explaining the growth and spreading of local exchange systems
- Social movements strong ideological approach
  - combining common theories on diffusion of innovations with framing theories of social movement research
  - first impression on social movements from this perspective
  - further research on this topic needed
- Next steps
  - analyze the impact of these variables and the existence of an Exchange System on the founding rate of further systems within a district (multiple events)
  - analyze systems' growth and survival in Germany

Many thanks for your attention!