Survival and Growth of New Organizational Forms

The German Local Exchange Trading Systems

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  – entrepreneurial characteristics
  – attributes of the new organisation itself
  – entrepreneurial environment

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Local Exchange Trading Systems

• Definition: special form of social movement
  – networks of mutual support and community-building especially for poor and unemployed
    • building alternative, local economy with own local currency
    • facilitating indirect exchange of goods and services
    • participation of socially excluded people rich in time but short in money

• Characteristics
  – no “economic institutions of capitalism”: neither monetary incentives nor enforceable contractual arrangements
    • local currency: time vs. money based
    • no interests
    • no or extremely generous credit ceiling
    • no banking secrecy
Objectives of the Study

• Objective
  – survival chances of Local Exchange Systems
  – organizational growth of Local Exchange Systems

• Research Questions
  – individual characteristics of founder
  – attributes, structural characteristics of Local Exchange System itself
  – environmental attributes
Theoretical Background

• Indicators: evaluation of success of the Local Exchange Systems
  – survival
    • Local Exchange Systems are Non-Profit Organisations
    • no transfer with capital gain possible
    • closure of Local Exchange System:
      “final manifestation of unsuccessful organization performance” (Carroll 1987: 44)
  – growth
    • sales trend not suited as indicator
      (no profits; no monetary dimensions)
    • employee trend: modified to participant trend
Entrepreneurial Characteristics

- Human Capital Theory
  - greater human capital increases productivity resulting in higher profits
  - traditionally focus on earnings of employees

- Transfer to entrepreneurial activity
  - greater human capital of founder increases his productivity resulting in better prospects of the foundation
  - especially modified form of specific human capital (industry-specific experience, prior self employment experience, leadership experience)
  - selectivity effects: well-endowed founders: better selection of promising projects
Entrepreneurial Characteristics

- Human capital and Local Exchange Systems
  - higher human capital of entrepreneur better prospects of Local Exchange System
    - better organization; public relations
    - selectivity effects: “a priori”
      (resources, knowledge of legal basis, planning)
  - forms of human capital
    - general human capital: no indicators available
    - greater importance of specific human capital
    - modified form of specific human capital
      (prior experiences with Local Exchange Systems, Non-Profit Organizations)

- Hypothesis:
  Human Capital of the founder will positively influence the prospects of the Local Exchange Systems.
Attributes of the new organization

- Organizational design
  - early founding: important organizational characteristics influencing prospects
- Organizational design with Local Exchange Systems
  - currency, rules, constitution
  - important for opportunistic behaviour and free riding

- Hypothesis
  *The success of the Local Exchange Systems is related to these organizational attributes.*
Attributes of new organization

- **Liability of newness** (Stinchcombe 1965)
  - many organizations die young: higher risk of failure
  - missing established relations, rules, roles, routines

- **Liability of adolescence**
  - inverted u-shaped risk pattern: initial rising risk
    - initial stock of resources
    - expectations of rational founder
  - especially Non-Profit Organizations
    - lower stress of competition
  - after adolescence:
    - judgement $\Rightarrow$ failure when expectations were disappointed

- **Followers**
  - better prospects: “piggybacking upon existing experience” (Bates 1990: 12)
    - established relations, internal routines
Attributes of new organizations

• Local Exchange Systems and age dependent survival chances
  – disassociate themselves from regular economy (no stress of market competition)
  – strong ideological approach: partially utopian objectives
  – danger of disappointing these euphoric expectations after period of protection (leap of faith)

• Hypothesis
  The risk pattern of Local Exchange Systems will follow a liability of adolescence.

• Local Exchange Systems as followers
  – stable affiliation to existing scheme: resources, knowledge, members

• Hypothesis
  Better survival chances are predicted for merger or spin-off systems.
Attributes of new organizations

• **Liability of smallness**
  – large new organizations ⇒ better survival chances
  – better cope with random shocks from the environment, better raise capital, better taxation conditions, better position in competing for qualified labour

• Local Exchange Systems and size dependent survival chances
  – distinct size at starting point for winning participants and diverged supply
  – too large systems: anonymous, no social control possible
  (problems in securing transactions)

• **Hypothesis**
  *For Exchange Systems an u-shaped pattern between size and mortality is expected, i.e. a survival of the medium size.*
Entrepreneurial Environment

• Organizational imprinting: density dependence of survival chances:
  – organizations of same population linked to each other through processes of legitimation and competition

• Density dependence and Local Exchange Systems
  – limited carrying capacity of niche at starting point

• Hypothesis
  *Mortality rate of Local Exchange Systems will decrease with increasing legitimation and increase as far as competition dominates the process.*

• Other environmental forces at founding:
  – *task, institutional environmental variables and effects of the political environment*

• Relevant variables for Local Exchange Systems at starting point
  – high regional employment rate: +
  – regional green orientation (percent voting greens in district): +
Methodology

- **Data**
  - standardized telephone interview of all capable Local Exchange Systems (N = 316)
    - survivor bias: dominance of successful schemes in sample
  - statistical bureau

- **Methods**
  - survival chances
    1. nonparametric, bivariate life-table estimate
      - two censor variables to avoid survivor bias:
        - failure
        - failure or less than 30% active members
    2. multivariate analyses with stronger censor variable
      - cox regression model
      - logistic regression model (failure within 5 years or less than 30% active members)
  - organizational growth
    - OLS regression model (participant trend, logarithm)
# Methodology

## Used variables and expected effects on survival chances

<table>
<thead>
<tr>
<th>Variable</th>
<th>Direction</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>entrepreneurial characteristics</strong></td>
<td></td>
</tr>
<tr>
<td>specific human capital</td>
<td>+</td>
</tr>
<tr>
<td>• personal experience</td>
<td>+</td>
</tr>
<tr>
<td>• indirect experience</td>
<td>+</td>
</tr>
<tr>
<td>• medial experience</td>
<td>+/-</td>
</tr>
<tr>
<td><strong>attributes of organization</strong></td>
<td></td>
</tr>
<tr>
<td>age</td>
<td>+</td>
</tr>
<tr>
<td>follower</td>
<td>+</td>
</tr>
<tr>
<td>size</td>
<td>+/-</td>
</tr>
<tr>
<td>organizational degree</td>
<td>+</td>
</tr>
<tr>
<td>currency (time-based)</td>
<td>+</td>
</tr>
<tr>
<td>rules (index)</td>
<td>+</td>
</tr>
<tr>
<td><strong>environmental characteristics</strong></td>
<td></td>
</tr>
<tr>
<td>population density</td>
<td>+/-</td>
</tr>
<tr>
<td>high regional unemployment rate</td>
<td>+</td>
</tr>
<tr>
<td>high percentage voting the greens in region</td>
<td>+</td>
</tr>
</tbody>
</table>
Results

- Survival of Local Exchange Systems

**Survival Function**

Source: Tauschringkoordinatorenbefragung 2005; N = 309

**Hazard Function**

Source: Tauschringkoordinatorenbefragung 2005; N = 309
Results

- Survival of Local Exchange Systems controlling for activity

**Survivor functions regarding activity**

**Hazard functions regarding activity**

- Censor variable “failure“: over estimation of survival chances
  - many schemes due to no/extremely low activity level no longer viable but still remain (formal vs. operative survival)

Source: Tauschringkoordinatorenbefragung 2005; N = 298 resp. 309
Results

Logistic regression: failure 5 years or less than 30% active members

<table>
<thead>
<tr>
<th>Variable</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HKpers</td>
<td>-0.263 (0.281)</td>
<td>0.054 (0.361)</td>
<td>0.091 (0.375)</td>
</tr>
<tr>
<td>HKInd</td>
<td>0.012 (0.348)</td>
<td>0.033 (0.352)</td>
<td>0.026 (0.372)</td>
</tr>
<tr>
<td>HKmed</td>
<td>0.059 (0.314)</td>
<td>0.016 (0.320)</td>
<td>-0.037 (0.327)</td>
</tr>
<tr>
<td>neu</td>
<td>1.298 (0.812)+</td>
<td>1.359 (0.823)*</td>
<td></td>
</tr>
<tr>
<td>lgröße</td>
<td>2.496 (1.492)*</td>
<td>2.679 (1.547)*</td>
<td></td>
</tr>
<tr>
<td>lgröße²</td>
<td>-0.370 (0.228)+</td>
<td>-0.393 (0.235)*</td>
<td></td>
</tr>
<tr>
<td>recht</td>
<td>-0.061 (0.402)</td>
<td></td>
<td>0.012 (0.410)</td>
</tr>
<tr>
<td>geld</td>
<td>-0.494 (0.356)</td>
<td></td>
<td>0.519 (0.369)</td>
</tr>
<tr>
<td>regel</td>
<td>-0.042 (0.075)</td>
<td></td>
<td>-0.045 (0.076)</td>
</tr>
<tr>
<td>dichte</td>
<td></td>
<td>-0.005 (0.009)</td>
<td></td>
</tr>
<tr>
<td>dichte²</td>
<td></td>
<td>0.000 (0.000)</td>
<td></td>
</tr>
<tr>
<td>alos</td>
<td></td>
<td>0.033 (0.034)</td>
<td></td>
</tr>
<tr>
<td>ideol</td>
<td></td>
<td>-0.040 (0.039)</td>
<td></td>
</tr>
<tr>
<td>Konstante</td>
<td>-1.107 (0.348)***</td>
<td>-6.352 (2.541)**</td>
<td>-7.058 (2.758)**</td>
</tr>
<tr>
<td>N</td>
<td>266</td>
<td>266</td>
<td>266</td>
</tr>
<tr>
<td>Pseudo R²</td>
<td>0.003</td>
<td>0.036</td>
<td>0.046</td>
</tr>
<tr>
<td>Chi²; df</td>
<td>0.714; 3</td>
<td>9.650; 9</td>
<td>12.549; 13</td>
</tr>
</tbody>
</table>

Source: Tauschringkoordinatorenbefragung 2005; statistical bureau: Statistische Jahrbücher

(*** 1% significance, (**) 5% significance, (*) 10% significance, (+) tend. significance, standard error in parenthesis)
Results

• Interpretation: effects on survival of Local Exchange Systems
  – almost no empirical evidence for ecological assumptions considering
    the survival chances of Local Exchange Systems
  – however strong survivor bias and little explanatory power of logistic
    regression models

• Successful schemes
  – follower systems
  – smaller or larger systems: liability of the medium size
Results

- Growth of Local Exchange Systems
  - only surviving systems in analysis
  - information about number of participants at point of founding and survey
  - dependent variable:
    difference of participants at point of survey and founding (logarithms)
  - methods: OLS Regression models

participant trend regarding age of Local Exchange System

Source: Tauschringkoordinatorenbefragung 2005; N = 248
## Results

### OLS Regression: Participant trend (logarithm): standardised beta coefficients

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<th>(3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HKpers</td>
<td>-0.101 (-1.559)</td>
<td>-0.079 (-1.089)</td>
<td>-0.082 (-1.118)</td>
</tr>
<tr>
<td>HKind</td>
<td>0.024 (0.364)</td>
<td>0.039 (0.590)</td>
<td>0.038 (0.572)</td>
</tr>
<tr>
<td>HKmed</td>
<td>-0.093 (-1.423)</td>
<td>-0.085 (-1.307)</td>
<td>-0.085 (-1.300)</td>
</tr>
<tr>
<td>neu</td>
<td>-0.046 (-0.634)</td>
<td>-0.049 (-0.673)</td>
<td></td>
</tr>
<tr>
<td>TRalter</td>
<td>0.187 (2.708)**</td>
<td>0.191 (2.667)**</td>
<td></td>
</tr>
<tr>
<td>regel</td>
<td>0.009 (0.143)</td>
<td>0.009 (0.134)</td>
<td></td>
</tr>
<tr>
<td>recht</td>
<td>-0.096 (-1.467)</td>
<td>-0.025 (-0.367)</td>
<td></td>
</tr>
<tr>
<td>geld</td>
<td>-0.022 (-0.336)</td>
<td>-0.097 (-1.470)</td>
<td></td>
</tr>
<tr>
<td>alos</td>
<td>-0.023 (-0.354)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ideol</td>
<td>-0.014 (-0.212)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>243</td>
<td>243</td>
<td>243</td>
</tr>
<tr>
<td>R²</td>
<td>0.018</td>
<td>0.056</td>
<td>0.057</td>
</tr>
</tbody>
</table>

Source: Tauschringkoordinatorenbefragung 2005; statistical bureau: Statistische Jahrbücher

(***): 1% significance, (**): 5% significance, (*) 10% significance, (+): tend. significance, standard error in parenthesis
Results

- Interpretation: effects on growth of Local Exchange Systems
  - again: almost no empirical evidence for ecological assumptions
  - population density due to colinearity effects not included

- Effects on growth
  - age of the system: liability of newness – social acceptance important for systems’ growth
Thank you for your attention!