Correspondence analysis as a tool to perform the embedded actor. An example from mobilities studies

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Overview

- Theoretical Background:
  - Mobilities Paradigm
  - Relational understanding of practices
- Methodological Foundation
- Empirical Analysis
  - Data description
  - Regression analysis
  - Multiple correspondence analysis
- Conclusion
All social relationships should be seen as involving diverse 'connections' that are more or less 'at distance', more or less fast, more or less intense and more or less involving physical movement. Social relations are never only fixed or located in place but are to very varying degrees constituted through 'circulating entities'.“ (Urry 2007: 46)

- Social formations emerge through and are stabilised by mobilities
- Focus on interrelations of different forms of spatial and virtual mobilities, movement
Spatial mobility as a relational practice

- Mobilities as a social practice, embedded in a multiplicity of social, material and spatial contexts

- Ability to move requires specific resources (competences, money, information ... cf. Kaufmann et al. 2004)

- Mobility actors negotiate their movements within their social network

- Negotiations take place within spatial and geographical situations (public transportation and traffic infrastructures, geographies of employment and housing opportunities, child care facilities etc.)

➤ Mobility practices shaped by social structures
Methodological foundation

- Antipositivist understanding of science:
  - Methods and methodologies extend and project theoretical axioms into the empirical world (Kuhn 1962; Diaz-Bone 2010)

-> Methods as carriers of theoretical assumptions

-> Performative view on methods as element of French Epistemology (Bachelard, Barthes, Canguilhem, Foucault)

- STS quote: Social research practices “enact realities and they can help to bring into being what they also discover” (Law/Urry 2004: 393)
Empirical analyses of mobility practices should account for:

1. *observable patterns of the practices of interest*, e.g. a set of interrelated geographical movements like residential mobility and commuting;

2. the *relational embedding of movement into social networks*, e.g. households. This entails also to focus on relational effects of mobility, e.g. that movement of one member of the household necessitates immobility of another;

3. the *structuring of movement patterns by geographical spatial situation*, e.g. transportation and traffic infrastructures, employment geographies, etc.
• **Data:** Swiss Household Panel 2012 (+ some information from 2004)

• **Research interest:** job related mobilities: daily *commuting* time and (cross-cantonal) *residential mobility*

• (heterosexual) **couples** aged 30-65 years as cases; n=1995

• **Variables of social context:**
  - Age: male mean age: 50.1 years, female mean age: 47.7 years
  - Children in the household (2/3 with children)
  - Education
  - Household income
  - Distribution of work between spouses

• **Variables of spatial context:**
  - Urban/rural settlement
  - Car available
  - House ownership
I. Residential mobility and length of residence

- 6% (n=115) moved between 2004 and 2012 from one canton into another.

<table>
<thead>
<tr>
<th>Length of residence at the current place:</th>
<th>≤ 5 years</th>
<th>6-12 years</th>
<th>13-18 years</th>
<th>≥ 19 years</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>33% (323)</td>
<td>28% (281)</td>
<td>13% (125)</td>
<td>26% (262)</td>
</tr>
</tbody>
</table>
2. Commuting Mobility

Average daily commuting time in minutes

<table>
<thead>
<tr>
<th></th>
<th>Women</th>
<th>Men</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>44</td>
<td>51</td>
</tr>
<tr>
<td>2004</td>
<td>40</td>
<td>48</td>
</tr>
<tr>
<td>2012 with children</td>
<td>41</td>
<td>52</td>
</tr>
<tr>
<td>2012 without children</td>
<td>51</td>
<td>49</td>
</tr>
</tbody>
</table>
### OLS Regression Analysis

#### Theoretical Background

<table>
<thead>
<tr>
<th>Variable</th>
<th>Estimate</th>
<th>Std. Error</th>
<th>t</th>
<th>Variable</th>
<th>Estimate</th>
<th>Std. Error</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>29.43*</td>
<td>12.89</td>
<td>2.28</td>
<td>Intercept</td>
<td>28.78*</td>
<td>13.40</td>
<td>2.15</td>
</tr>
<tr>
<td>own education</td>
<td>9.95***</td>
<td>1.98</td>
<td>5.03</td>
<td>own education</td>
<td>8.34***</td>
<td>2.29</td>
<td>3.64</td>
</tr>
<tr>
<td>own age</td>
<td>-0.63*</td>
<td>0.28</td>
<td>-2.22</td>
<td>own age</td>
<td>-0.12</td>
<td>0.28</td>
<td>-0.42</td>
</tr>
<tr>
<td>children (no children)</td>
<td>5.69*</td>
<td>2.79</td>
<td>2.04</td>
<td>children (no children)</td>
<td>-8.05**</td>
<td>2.89</td>
<td>-2.78</td>
</tr>
<tr>
<td>Partner's comtime</td>
<td>-0.01</td>
<td>0.03</td>
<td>-0.42</td>
<td>Partner's comtime</td>
<td>-0.01</td>
<td>0.03</td>
<td>-0.42</td>
</tr>
<tr>
<td>Partner's edu</td>
<td>0.65</td>
<td>2.22</td>
<td>0.29</td>
<td>Partner's edu</td>
<td>5.15*</td>
<td>2.08</td>
<td>2.48</td>
</tr>
<tr>
<td>Partner's age</td>
<td>0.05</td>
<td>0.27</td>
<td>0.18</td>
<td>Partner's age</td>
<td>-0.10</td>
<td>0.30</td>
<td>-0.34</td>
</tr>
<tr>
<td>household Income</td>
<td>8.66***</td>
<td>1.54</td>
<td>5.62</td>
<td>household Income</td>
<td>4.11*</td>
<td>1.62</td>
<td>2.54</td>
</tr>
<tr>
<td>car available</td>
<td>-13.81**</td>
<td>5.27</td>
<td>-2.62</td>
<td>car available</td>
<td>1.26</td>
<td>5.50</td>
<td>0.23</td>
</tr>
<tr>
<td>house (tenant)</td>
<td>4.73</td>
<td>2.72</td>
<td>1.74</td>
<td>house (tenant)</td>
<td>-3.20</td>
<td>2.83</td>
<td>-1.13</td>
</tr>
<tr>
<td>urban</td>
<td>2.03</td>
<td>1.50</td>
<td>1.36</td>
<td>urban</td>
<td>-0.04</td>
<td>1.56</td>
<td>-0.02</td>
</tr>
<tr>
<td>move (no move)</td>
<td>-6.28</td>
<td>4.84</td>
<td>-1.30</td>
<td>move (no move)</td>
<td>-12.52*</td>
<td>5.02</td>
<td>-2.50</td>
</tr>
</tbody>
</table>

#### Methodologic Foundation

- **Empirical Analysis**
  - **Conclusion**

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24.03.2015 Katharina Manderscheid: MCA as a tool to perform the embedded mobile actor
Space of mobility practices
Space of mobility practices

Theoretical Background

Methodological Foundation

Empirical Analysis

Conclusion

High residential and commuting mobility
Space of mobility practices

- Theoretical Background
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Diagram:
- Employed in temporal proximity
- Not employed
- High residential and commuting mobility

Legend:
- M.comtime < 20 min
- F.comtime < 20 min
- M.comtime > 1 h
- F.comtime > 1 h
- res < 5 years
- res > 19 years
- res 6-12 years
- res 13-18 years
- Not employed
- interkantonal move
- M.comtime 41 - 60 min
- F.comtime 41 - 60 min
- M.comtime 21 - 40 min
- M.comtime 21 - 40 min

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Employed in temporal proximity

High residential and commuting mobility

Nicht erwerbstätig

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**Conclusion**

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**Socio-economic context**

- **Age**
- **Income/education**

**Theoretical Background**

**Methodological Foundation**

**Empirical Analysis**

**Conclusion**
Socio-economic context

- Theoretical Background
- Methodological Foundation
- Empirical Analysis
- Conclusion

Job reason for move

Graph showing various factors affecting socio-economic context.
Socio-economic context

Theoretical Background

Methodological Foundation

Empirical Analysis

Conclusion
Spatial context

Theoretical Background

Methodological Foundation

Empirical Analysis

Conclusion
Spatial context

Theoretical Background

Methodological Foundation

Empirical Analysis

Conclusion
Spatial context
Spacial context

Theoretical Background

Methodological Foundation

Empirical Analysis

Conclusion
Continuity of Movement: Commuting 2004

Theoretical Background

Methodological Foundation

Empirical Analysis

Conclusion

M comtime:2004 < 20 min
F comtime:2004 < 20 min

M comtime:2004 41-60 min
F comtime:2004 41-60 min

M comtime:2004 21-40 min
F comtime:2004 21-40 min

M comtime:2004 > 1 h
F comtime:2004 > 1 h

M comtime:2004 not employed
F comtime:2004 not employed

res > 19 years
res < 5 years
res 13-19 years

interkantonal move

Conclusion

Regression model reduces social and spatial context to properties of the individual

→ movement understood as outcome of rational choice made by individual subjects against the background of individual preferences and available resources

MCA first constructs the geometric pattern of practices and then searches for interpretation of the dimensions

→ international comparison highlights structuring impact of social and spatial settings


