Rationality and University Drop Out

Michaela Sixt
University of Bamberg

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Overview

- University Drop-out in Germany
- Determinants of Drop-out
- The Rational-Choice-Perspective
- Data, Variables & Sample
- First Results
- Conclusion and Further Steps
University Drop-out in Germany

Development of drop-out at universities and “Fachhochschulen (FH)” (%)

Source: Heublein et al. 2008; HIS - Studienabbruchuntersuchung 2008
University Drop-out in Germany

Differences in drop-out rates:

- Kind of academia
- Subject-specific drop-out (high drop-out: natural sciences, engineering, economics, linguistics and cultural sciences; low drop-out: medicine, “Lehramt”, geography)
- Certificate (Staatsexamen 7% - Diplom/Magister 30% - BA 30%)
- Men drop out more often than women (when controlling subject)
- Social background

Determinants of Drop-out

- Cognitive and non-cognitive competencies
- Personality traits and orientations (e.g. self-concept, attitude to work)
- Motives of choice (intrinsic e.g. professional interest vs. extrinsic e.g. high income)
- Conditions of studies (e.g. organization, supervision)
- Academic and social integration (cp. Tinto 1975)
- Lack of information and expectancies
- Non-university burdens (financial situation, employment, family situation)

(for an overview: Blüthmann et al. 2008; Heublein et al. 2003)
The Rational-Choice-Perspective (Erikson & Jonsson 1996)

Drop-out as a consequence of a low subjective expected utility (SEU) of a university degree determined by

- subjective probability of success (p)
- subjective expected benefits (b)
- subjective expected costs (c)

\[
\text{SEU (university degree)} = (p \times b) - c
\]
Data, Variables & Sample

Data: NEPS - Stage 7 Students

• Sample:
  • BA-Freshmen (University & „Fachhochschule“)
  • Selected subjects
  • Bavaria, North Rhine-Westphalia and Lower Saxony

• Pilotstudies of two waves:
  • Autumn 2009 (CATI), N = 483
  • Spring 2010 (Online), N = 331

• Analyzed cases: N = 202
Data, Variables & Sample

Dependent variable:
„I am thinking seriously about quitting my studies.“

→ Outcome Variable: drop-out intention

Never thought about drop-out  
(79.6%, N = 161)

Thought about drop-out  
(20.4%, N = 41)
Independent variables:

- Estimation of the probability of successfully finishing studies

Benefits:
- Subjective importance of a university degree for having a well-paid job, prestigious job, interesting job
- Fun with studies
- Probability of status maintenance with a university degree

Costs:
- Indirect and direct cost when reaching a university degree
- Alienation from family when reaching a university degree
- High burden/stress when reaching a university degree
First Results

Correlation (Pearson) of drop-out intention and …

Significance: p<0.1 = +; p<0.05 = *; p<0.01 = **
# First Results

## Probability of drop-out intention (Logistic Regression/Odds Ratio)

<table>
<thead>
<tr>
<th></th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Highest parental educational degree (Ref.: high)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>.426</td>
<td>1.203</td>
<td>.391</td>
<td>.378</td>
</tr>
<tr>
<td>Middle</td>
<td>1.176</td>
<td>.459</td>
<td>.917</td>
<td>.933</td>
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<tr>
<td>Missing</td>
<td>.320</td>
<td>1.012</td>
<td>.272</td>
<td>.278</td>
</tr>
<tr>
<td><strong>HISEI (Proxy-values)</strong></td>
<td>1.009</td>
<td>1.014</td>
<td>1.014</td>
<td></td>
</tr>
<tr>
<td><strong>Probability of success</strong></td>
<td>.536 +</td>
<td>.613</td>
<td>.597</td>
<td></td>
</tr>
<tr>
<td><strong>Benefit</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Well-paid job</td>
<td>.662</td>
<td>.661</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prestigious job</td>
<td>1.173</td>
<td>1.209</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interesting job</td>
<td>.994</td>
<td>.959</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Importance of status maintenance</strong></td>
<td>1.081</td>
<td>1.059</td>
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</tr>
<tr>
<td><strong>Probability of status maintenance</strong></td>
<td>.957</td>
<td>1.017</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fun</td>
<td>.665 +</td>
<td>.648 +</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Costs</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direct/indirect</td>
<td></td>
<td></td>
<td></td>
<td>.920</td>
</tr>
<tr>
<td>Alienation from family</td>
<td></td>
<td></td>
<td>1.149</td>
<td></td>
</tr>
<tr>
<td>Stress</td>
<td></td>
<td></td>
<td></td>
<td>.850</td>
</tr>
<tr>
<td>-2 Log-Likelihood</td>
<td>185.94</td>
<td>182.51</td>
<td>176.33</td>
<td>175.35</td>
</tr>
<tr>
<td>R²</td>
<td>0.13</td>
<td>0.16</td>
<td>0.20</td>
<td>0.21</td>
</tr>
</tbody>
</table>

Source: NEPS - Stage 7, Wave Autumn 2009/Spring 2010, N=202, Exp (B); p<0.1 = +; p<0.05 = * Controlled in every model: sex, year of birth, migration background, subject, employment status, available income, average grade (mathematics/German)
# First Results

## Probability of drop-out intention (Logistic Regression/Odds Ratio)

<table>
<thead>
<tr>
<th></th>
<th>Model 5</th>
<th>Model 6</th>
<th>Model 7</th>
<th>Model 8</th>
<th>Model 9</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Probability of success</strong></td>
<td>0.016*</td>
<td>0.026+</td>
<td>0.078*</td>
<td>0.206</td>
<td>1.373</td>
</tr>
<tr>
<td><strong>Benefit</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Well-paid job</td>
<td>0.015*</td>
<td>0.628</td>
<td>0.592</td>
<td>0.658</td>
<td>0.653</td>
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<tr>
<td>Prestigious job</td>
<td>1.145</td>
<td>0.044+</td>
<td>1.288</td>
<td>1.224</td>
<td>1.227</td>
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<tr>
<td>Interesting job</td>
<td>0.883</td>
<td>0.938</td>
<td>0.085+</td>
<td>0.960</td>
<td>0.966</td>
</tr>
<tr>
<td>Importance of status maintenance</td>
<td>1.046</td>
<td>1.089</td>
<td>1.047</td>
<td>1.080</td>
<td>1.057</td>
</tr>
<tr>
<td>Probability of status maintenance</td>
<td>1.050</td>
<td>1.069</td>
<td>1.077</td>
<td>0.368</td>
<td>0.959</td>
</tr>
<tr>
<td>Fun</td>
<td>0.620+</td>
<td>0.615+</td>
<td>0.641+</td>
<td>0.679</td>
<td>1.666</td>
</tr>
<tr>
<td><strong>Costs</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direct/indirect</td>
<td>0.888</td>
<td>0.930</td>
<td>0.875</td>
<td>0.901</td>
<td>0.935</td>
</tr>
<tr>
<td>Alienation from family</td>
<td>1.072</td>
<td>1.041</td>
<td>1.230</td>
<td>1.120</td>
<td>1.153</td>
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<tr>
<td>Stress</td>
<td>0.801</td>
<td>0.843</td>
<td>0.878</td>
<td>0.859</td>
<td>0.843</td>
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<tr>
<td><strong>Interaction effects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>p*well-paid job</td>
<td>2.443*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>p*prestigious job</td>
<td></td>
<td>2.186+</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>p*interesting job</td>
<td></td>
<td></td>
<td>1.741+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>p*probability of status maintenance</td>
<td></td>
<td></td>
<td></td>
<td>1.280</td>
<td></td>
</tr>
<tr>
<td>p*fun</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.804</td>
</tr>
</tbody>
</table>

| 2 Log-Likelihood      | 171.02  | 171.88  | 172.27  | 175.05  | 174.97  |
| R²                    | 0.24    | 0.23    | 0.23    | 0.21    | 0.21    |


Exp (B); p<0.1 = +; p<0.05 = *; Controlled in every model: sex, year of birth, migration background, subject, employment status, available income, average grade (mathematics/German), highest parental educational degree; HISEI.
First Results

Particular effects on probability of drop-out intention

Probability of success:  LOW  HIGH  LOW  HIGH
Well-paid job:       LOW  LOW  HIGH  HIGH

Source: NEPS - Stage 7, Wave Autumn 2009/Spring 2010, N=202,
Logit-Coefficients; controlled : sex, year of birth, migration background, subject, employment status, available income, average grade (mathematics/German). highest parental educational degree; HISEI, prestigious job, interesting job, importance of status maintenance, probability of status maintenance, fun, costs, alienation from family, stress , interaction p*well-paid job.
First Results

Particular effects on probability of drop-out intention

Probability of success:
- LOW
- HIGH

Prestigious job:
- LOW
- HIGH

Source: NEPS - Stage 7, Wave Autumn 2009/Spring 2010, N=202,
Logit-Coefficients; controlled : sex, year of birth, migration background, subject, employment status, available income, average grade (mathematics/German), highest parental educational degree; HISEI, well-paid job, interesting job, importance of status maintenance, probability of status maintenance, fun, costs, alienation from family, stress, interaction *prestigious job.
First Results

Particular effects on probability of drop-out intention

![Graph showing the effects of probability of success and interesting job on drop-out intention.]

<table>
<thead>
<tr>
<th>Probability of success</th>
<th>Interesting job</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOW</td>
<td>LOW</td>
</tr>
<tr>
<td>HIGH</td>
<td>LOW</td>
</tr>
<tr>
<td>LOW</td>
<td>HIGH</td>
</tr>
<tr>
<td>HIGH</td>
<td>HIGH</td>
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</table>

Source: NEPS - Stage 7, Wave Autumn 2009/Spring 2010, N=202,
Logit-Coefficients; controlled: sex, year of birth, migration background, subject, employment status, available income, average grade (mathematics/German), highest parental educational degree; HISEI, well-paid job, prestigious job, importance of status maintenance, probability of status maintenance, fun, costs, alienation from family, stress, interaction *interesting job.
Conclusion and Further Steps

Main findings:

• No empirical hint for an effect of social origin on drop-out intention

• Fun has clear effect on drop-out intention

• Costs (seem) have no effect on drop-out intention

• Considering interaction effects of subjective probability of success and the job related benefits on drop-out intention, both are important determinants of the drop-out intention
Conclusion and Further Steps

Further steps:
→ Main studies (number of cases)
→ Further waves: drop-out not drop-out intension

Integration of further determinants:
→ Bounded Rationality: subjective information, norms and values, attitudes toward education
→ Motives of choice, personality traits, competences
→ Social and academic Integration
Thank you for your attention!

Michaela Sixt
University Bamberg – NEPS

michaela.sixt@uni-bamberg.de
References


