PhD Course

Behavioral Management: Theory and Experiments

Block course: Tuesday, 6th – Friday 9th September 2016
Time: 9 a.m. – 6 p.m., room tba

Course Instructor: Professor Guido Voigt (UHH)
Course Value: 2 SWS or 4 LP
Teaching language: English (if only German-speakers: German), but slides in English
Course overview & contents:
The course discusses the basic steps of performing behavioral research that is inspired by normative, game-theoretic models. We start with discussing game theoretic pricing models that are frequently employed as building blocks in the marketing, supply chain management, and industrial organization literature. We identify assumptions that seem critical from a behavioral perspective and hypothesize what happens when these assumptions are lifted. We are then designing laboratory experiments that test these behavioral hypotheses. We discuss how to analyze the data from laboratory experiments with the statistical software package STATA (non-parametric tests, regression analysis incl. robust standard errors, random/fixed effects models). Students will analyze (already gathered) data and present their conclusions. Based on these insights, students will develop a behavioral model that accounts for behavioral phenomena such as fairness preferences and bounded rationality. We use maximum likelihood estimation (using the software R) to calibrate the behavioral parameters of the model.
Software:
Much of this course focuses on application of statistical methods using STATA, MATLAB or R.
Prerequisites:
- basic background in game theory and statistics
- solid programming skills (any programming language, e.g. VBA, will be sufficient)
Assessment:
Assessment will be based on active participation. Grading for students of University of Hamburg will be pass/fail.
Registration: lennart.johnsen@uni-hamburg.de (first come – first served)
### Schedule (tentative):

<table>
<thead>
<tr>
<th>Day</th>
<th>Topic</th>
<th>Suggested Readings</th>
<th>Suggested Assignments</th>
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<tbody>
<tr>
<td>Tuesday</td>
<td>Game theoretic models &amp; critical assumptions</td>
<td>Spengler 1950</td>
<td>Identify critical behavioral assumption in game theoretic model (article provided)</td>
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<td>Laboratory Experiments</td>
<td>Katok 2011</td>
<td>Develop behavioral hypotheses</td>
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<td>Design and present laboratory experiment</td>
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<td>Wednesday</td>
<td>Statistical methods:</td>
<td>Baum 2006</td>
<td>Analyze experimental data and present the results.</td>
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<td>non-parametric tests</td>
<td>Sheskin 2011</td>
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<td>random and fixed effects regression</td>
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<td>Thursday</td>
<td>Fairness preferences &amp; bounded rationality</td>
<td>Fehr and Schmidt 1999</td>
<td>Develop a behavioral model based on Spengler’s double marginalization problem</td>
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<td>Luce 2005</td>
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<td>McKelvey and Palfrey 1995</td>
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<td>Hartwig et al. 2015</td>
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<td>Friday</td>
<td>Maximum Likelihood estimation of behavioral parameters</td>
<td>Henningsen and Toomet 2011</td>
<td>Estimate behavioral parameters with R (or, if more convenient, MATLAB or Maple)</td>
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### Recommended Texts:

**Statistical analysis**
- Baum, C. F. 2006. An introduction to modern econometrics using Stata. Stata press

**Behavioral biases in contracting**
- Lim, N., T. Ho. 2007. Designing price contracts for boundedly rational customers: Does the number of blocks matter? Marketing Science 26(3) 312-326
Double marginalization:

How to design laboratory experiments
- Katok, E. 2012. Using laboratory experiments to build better operations management models. Foundations and trends in technology, information and operations management 5(1) 1-88

Bounded rationality & Fairness Preferences