universität wien

INSTRUCTION SHEET
(PART WAGNER)

PhD MANAGEMENT

Experimental and Simulation Methods (390026)

o. Univ.-Prof. Dipl.-Ing. Dr. Dr. h. c. Udo Wagner
Univ.-Prof. Mag. Dr. Bernhard Kittel

SS 2018

Monday, 15 – 16:30; SR 6

1. Target Group

Students of the PhD-Program in Management
This course is part of the core program of the curriculum PhD management, see:
http://wirtschaftswissenschaften.univie.ac.at/fileadmin/user_upload/f_wiwi/Service/Downloadcenter/PhD/Curriculum/Struktur_des_PhD_2_eng.pdf

Students are required to have passed Multivariate Business Statistics successfully.

2. Organizational Issues

- 2 Hours, 10 ECTS credits
- Language of Instruction: English
- Limited number of participants (max. 15)
- Students are required to register via the U:Space-System

3. Course Content and Course Objectives

This course introduces experimental design and the statistical analysis of experimental data. In the first part (**Instructor Prof. Kittel**), we will discuss the usefulness of experiments for both testing theories and finding stylized facts about human behavior. We will explore different research designs and elaborate on various criteria of validity underlying conclusions about social mechanisms and about their applicability to a wider set of situations. Furthermore, we will look into incentives, in particular induced preferences and social preferences, and causes of noise in the data. Finally, we will address some issues relating to deception in experimentation. A workshop on z-Tree closes the first part of the course. Participants are expected to work out an own experiment during the first part of the course and to present the design at the end of this phase. For further details see: https://ufind.univie.ac.at/de/course.html?lv=390026&semester=2018S

In the second part (**Instructor Prof. Wagner**), appropriate statistical methods will be presented which are suited for analyzing data collected by means of experimental research projects. We will differentiate according to the level of measurement of the dependent

variable and further between the designs of the experiment (i.e., between-subjects vs. within-subjects). In order to be able to perform statistical analysis on empirical data examples will be provided as to how SPSS implements the techniques presented. Students have to conduct statistical analyses on an individual data sets provided by the instructor and have to provide written reports about the results achieved. Finally, an introduction to simulations methods (focusing on human behavior) will be provided.

After passing this course students should be able to design research projects on their own and to analyze the data generated therefrom.

4. Course Grades

Since not all of the material can be discussed in class, students are expected to prepare for class sessions by studying the relevant literature (see Readings-section). Regular class attendance is expected.

Course grades will be based on various requirements, with the following weights:

- Part Prof. Kittel 50 %
- Exam (Part Prof. Wagner) 40 %
  (Students will have to conduct data analysis in the Computer Lab; open book exam)
- Data analysis projects (Part Prof. Wagner) 10 %

In order to receive your computerized credit report, be sure to have registered in u:space.

Please respect correct scientific conduct when writing research papers and in particular never neglect citation guidelines when using intellectual work of others; see for example:
http://marketing.univie.ac.at/studierende/verhaltenskodex/
https://wirtschaftswissenschaften.univie.ac.at/service/studienservicecenter/schriftliche-arbeiten/dissertation/#c49395

5. Readings

Copies of the Power Point presentations will be made available on the „MOODLE“ platform.

Part Prof. Wagner

(BEPW) Backhaus Klaus, Erichson Bernd, Plinke Wulff, Weiber Rolf (2016) *Multivariate Analysemethoden*, 14. Auflage, Springer. *http://amzn.to/2ooApUz*

(BEW) Backhaus Klaus, Erichson Bernd, Weiber Rolf (2015) *Fortgeschrittene Multivariate Analysemethoden*, 3. Auflage, Springer. *http://amzn.to/2GHjK56*

(EWV) Ebster Claus, Wagner Udo, Valis Sabine (2006) “The Effectiveness of Verbal Prompts on Sales”, *Journal of Retailing and Consumer Services 13, 3*, 169-176.

(EWRP) Ebster Claus, Wagner Udo, Richter Verena, Prenner Madeleine (2009) „Context Effects of Erotic Television Advertising”, *Marketing – JRM 5, 2,* 61-70.

(HHL) Hillier Frederick, Hillier Mark, Lieberman Gerald (2000) *Introduction to Management Science*, McGraw-Hill. *http://amzn.to/1M5zxsI*

(TF1) Tabachnick Barbara, Fidell Linda (2014) *Using Multivariate Statistics*, Sixth edition, Pearson. *http://amzn.to/1A555vP*

(TF2) Tabachnick Barbara, Fidell Linda (2007) *Experimental Designs Using ANOVA,* Thomson. *http://amzn.to/1CalSLB*

Further Readings

Bühl Achim (2014) *SPSS 22 – Einführung in die moderne Datenanalyse*, 14. Auflage, Pearson. *http://amzn.to/1z02o8N*

Field Andy (2018) Discovering Statistics Using IBM SPSS Statistics, 5th edition, Sage. *http://amzn.to/2GN4eoB*

6. Time Schedule (Part Prof. Wagner)

Date (*)	**(Tentative) Content**
19.3.	Basic terminology: experimental design and statistics Discrete dependent variables: cross tabulations, Chi-square tests, log-linear models, logistic regression, Correspondence analysis, McNemar's change test TF1 10, 16 TF2 1, 2 BEPW 5, 6, 15 BEW 7 EWV
9.4.	Ordinal dependent variables: Mann-Whitney U Test, Wilcoxon T Test, Kruskall-Wallis H Test, Friedman Test TF1 10, 16
16.4. 23.4.	Basic terminology: t-Test, effect sizes, interaction effects, contrasts, post-hoc tests Continuous dependent variable, independent samples, covariates: ANOVA (one way, n-ways), ANCOVA TF2 3-5 BEPW 3 EWRP
30.4. 7.5.	Continuous dependent variable, dependent samples/repeated measures, covariates: ANOVA (n-ways), ANCOVA; multiple ANOVA TF2 6, 7
14.5. 4.6.	Some introduction in simulation for analyzing human behavior HHL 15 WG WRG
11.6.	Exam (Part Prof. Wagner), **Computer Lab 1**
(*)	One of these target dates is supposed to be a fallback session, in case one of the targeted sessions needs to be cancelled.

Outline Part Experimental Design
(Part Kittel)

09.03.2018

1 **9:00-10:30** Introduction

Falk, Armin, Heckman, James J. 2009. "Lab Experiments Are a Major Source of Knowledge in the Social Sciences." *Science* 326: 535-38

Croson, Rachel, Gächter, Simon. 2010. "The Science of Experimental Economics." *Journal of Economic Behavior and Organization* 73: 122-31

Thye, Shane R. 2014. "Logical and Philosophical Foundations of Experimental Research in the Social Sciences." Pp. 53-82. *Laboratory Experiments in the Social Sciences.* Murray Webster Jr. and Jane Sell, editors. Academic Press.

Webster Jr., Murray, Sell, Jane. 2014. "Why Do Experiments?" Pp. 5-21. *Laboratory Experiments in the Social Sciences.* Murray Webster Jr. and Jane Sell, editors. Academic Press.

2 **10:15-12:15** **Experimental Session**

3 **13:00-14:30** **Examples**

Berg, Joyce, Dickhaut, John, McCabe, Kevin. 1995. "Trust, Reciprocity, and Social History." *Games and Economic Behavior* 10: 122-42

Ostrom, Elinor, Walker, James, Gardner, Roy. 1992. "Covenants With and Without a Sword: Self-Governance in Possible." *American Political Science Review* 86(2): 404-17

Fehr, Ernst, Gächter, Simon. 2000. "Cooperation and Punishment in Public Goods Experiments." *American Economic Review* 90(4): 980-94

13.04.2018

4 **9:00-10:30** **Types of Experiments**

Murnighan, J. Keith. 2015. "A General Model for Experimental Inquiry in Economics and Social Psychology." Pp. 166-80. *Handbook of Experimental Economic Methodology.* Guillaume Fréchette and Andrew Schotter, editors. Oxford University Press.

Iyengar, Shanto. 2011. "Laboratory Experiments in Political Science." Pp. 73-88. *Cambridge Handbook of Experimental Political Science.* James N. Druckman, Donald P. Green, James H. Kuklinski and Arthur Lupia, editors. Cambridge University Press.

Levitt, Steven D., List, John A. 2009. "Field Experiments in Economics: The Past, the Present, and the Future." *European Economic Review* 53: 1-18

Sniderman, Paul M. 2011. "The Logic and Design of the Survey Experiment: An Autobiography of a Methodological Innovation." Pp. 102-14. *Cambridge Handbook of Experimental Political Science.* James N. Druckman, Donald P. Green, James H. Kuklinski and Arthur Lupia, eds. Cambridge University Press.

5 **10:45-12:15** **Experimental Design and Validity**

McDermott, Rose. 2011. "Internal and External Validity." *Cambridge Handbook of Experimental Political Science.* Pp. 27-40. James N. Druckman, Donald P. Green, James H. Kuklinski and Arthur Lupia, editors. Cambridge University Press.

Schram, Arthur. 2005. "Artificiality: The Tension Between Internal and External Validity in Economic Experiments." *Journal of Economic Methodology* 12(2): 225-37

Levitt, Steven D., List, John A. 2007. "What Do Laboratory Experiments Measuring Social Preferences Reveal About the Real World." *Journal of Economic Perspectives* 21(2): 153-74

Camerer, Colin F. 2015. "The Promise and Success of Lab-Field Generalizability in Experimental Economics: A Critical Reply to Levitt and List." Pp. 249-95. *Handbook of Experimental Economic Methodology.* Guillaume Fréchette and Andrew Schotter, editors. Oxford University Press.

20.04.2018

6 **9:00-10:30** **Aims of Inquiry and Human Subjects**

Tyler, Tom R., M., Amodio David. 2015. "Psychology and Economics: Areas of Convergence and Difference." Pp. 181-96. *Handbook of Experimental Economic Methodology.* Guillaume Fréchette and Andrew Schotter, editors. Oxford University Press.

Smith, Vernon. 1976. "Experimental Economics: Induced Value Theory." *American Economic Review* 66(2): 274-79

Fréchette, Guillaume. 2015. "Laboratory Experiments: Professionals versus Students." Pp. 360-90. *Handbook of Experimental Economic Methodology.* Guillaume Fréchette and Andrew Schotter, editors. Oxford University Press.

Kalkhoff, Will, Youngreen, Reef, Nath, Leda, Lovaglia, Michael J. 2014. "Human Participants in Laboratory Experiments in the Social Sciences." Pp. 103-26. *Laboratory Experiments in the Social Sciences.* Murray Webster Jr. and Jane Sell, editors. Academic Press.

7	**10:45-12:15**	**Ethics**

Hegtvedt, Karen A. 2014. "Ethics and Experiments." Pp. 23-51. *Laboratory Experiments in the Social Sciences.* Murray Webster Jr. and Jane Sell, editors. Academic Press.

Hertwig, Ralph, Ortmann, Andreas. 2008. "Deception in Experiments: Revisiting the Arguments in its Defense." *Ethics and Behavior* 18(1): 59-92

Barrera, Davide, Simpson, Brent. 2012. "Much Ado About Deception: Consequences of Deceiving Research Participants in the Social Sciences." *Sociological Methods & Research* 41(3): 383-413

Peyton, Kyle. 2012. "Ethics and Politics in Field Experiments." *The Experimental Political Scientist. Newsletter of the APSA Experimental Section* 3(1): 20-37

Further Reading

Bardsley, Nicholas, Cubitt, Robin, Loomes, Graham, Moffatt, Peter, Starmer, Chris, Sugden, Robert. 2010. *Experimental Economics. Rethinking the Rules*. Princeton University Press.

Druckman, James N., Green, Donald P., Kuklinski, James H., Lupia, Arthur, eds. 2011. *Cambridge Handbook of Experimental Political Science*. Cambridge University Press.

Fréchette, Guillaume, Schotter, Andrew, eds. 2015. *Handbook of Experimental Economic Methodology*. Oxford University Press.

Friedman, Daniel, Sunder, Shyam. 1994. *Experimental Methods. A Primer for Economists*. Cambridge University Press.

Gerber, Alan S., Green, Donald P. 2012. *Field Experiments: Design, Analysis, and Interpretation*. Norton.

Glennerster, Rachel, Takavarasha, Kudzai. 2013. *Running Randomized Evaluations. A Practical Guide*. Princeton University Press.

Kagel, John H., Roth, Alvin E., eds. 1995. *Handbook of Experimental Economics*. Princeton University Press.

Kittel, Bernhard, Luhan, Wolfgang J., Morton, Rebecca B., eds. 2012. *Experimental Political Science: Principles and Practices*. Palgrave-Macmillan.

Morton, Rebecca B., Williams, Kenneth. 2010. *Experimental Political Science and the Study of Causality. From Nature to the Lab*. Cambridge University Press.

Mutz, Diana C. 2011. *Population-based Survey Experiments*. Princeton University Press.

Plott, Charles A., Smith, Vernon L. 2008. *Handbook of Experimental Economics Results. Volume I.* North-Holland.

Webster Jr., Murray, Sell, Jane, eds. 2014. *Laboratory Experiments in the Social Sciences* (2nd ed.). Academic Press.

Examination

a) Presentation and discussion of specific topic in seminar session. (50%)
b) End-of-term paper describing an experimental design in the field of research of the dissertation. (50%)