PhD Course
Statistical Significance, Impact, and Relevance

LECTURER               Prof. Dr. Dr. h.c. Sönke Albers

TIME, PLACE            3 full days: 17-19Sep2024, 09h00 – 16h30
                       UHH, Moorweidenstr. 18, room 0029

CREDIT POINTS          5 credit points in the Graduate Program at the Faculty of
                       Business Administration: in “methods”.

REGISTRATION           directly by email to Soenke.albers@klu.org and via STiNE.
                       For questions regarding course content, please contact
                       soenke.albers@klu.org; phone: +49 151 52702547

REGISTRATION PROCEDURE “Participants should register until July 1, 2024 and provide a
ranking of their three most preferred topics for preparing a presentation. Please send this ranking to my email address. I
will then assign participants to topics giving priority to those
who registered early. After assignment, I want to provide in a
short 1-to-1 Zoom meeting more specific information for the
respective topic for a better understanding. A date for this
Zoom meeting will be individually agreed upon by email.
If not all of the 12 topics are assigned until July 15, I will accept
later registrations on a first-come-first served basis. If there are
less than 8 registrations until July 31, the course will not take
place.”

ASSESSMENT            * presentation (max. 45 min.)
                       * Contributions in discussions
                       * Two-page paper on how to make use of the course content.

NUMBER OF PARTICIPANTS maximum of 12, one for each topic

COURSE LANGUAGE       English

OBJECTIVES
In this course participants will get a basic understanding of how different goals of empirical
research are realized and what kind of results can be achieved. The course is interactive with
participating doctoral students presenting certain topics that are discussed intensively
afterwards.
REMARKS WITH RESPECT TO REFERENCES

The references mentioned below should serve as a starting point. As you will only submit slides (no text), please make sure that you clearly indicate on each slide to which reference you refer. Please provide the full information of each reference on each slide.

CONTENT

**Day 1 = 17Sep2024:**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
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<tbody>
<tr>
<td>09h00 – 10h30</td>
<td>1. What do we want to know (what is=facts; whether there is a relationship, why is there a relationship=theory; impact of relationship)</td>
</tr>
<tr>
<td>10h45 – 12h15</td>
<td>2. Inductive research (case study) versus deductive research (theory testing)</td>
</tr>
<tr>
<td>13h15 – 14h45</td>
<td>3. Experiments, pre-registration, difference-in-difference</td>
</tr>
<tr>
<td>15h00 – 16h30</td>
<td>4. What can be concluded from statistical significance?</td>
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**Day 2 = 18Sep2024:**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
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<tbody>
<tr>
<td>09h00 – 10h30</td>
<td>5. Threats of true results and robustness checks (e. g., sampling; control variables; nonlinearity)</td>
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<tr>
<td>10h45 – 12h15</td>
<td>6. Endogeneity</td>
</tr>
<tr>
<td>13h15 – 14h45</td>
<td>7. Specification curve</td>
</tr>
<tr>
<td>15h00 – 16h30</td>
<td>8. Impact Measures of Variables in Machine Learning</td>
</tr>
</tbody>
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**Day 3 = 19Sep2024:**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
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<tbody>
<tr>
<td>09h00 – 10h30</td>
<td>9. Replications</td>
</tr>
<tr>
<td>10h45 – 12h15</td>
<td>10. Meta-analyses and effect size measures</td>
</tr>
<tr>
<td>13h15 – 14h45</td>
<td>11. Relevance for Science and Practice</td>
</tr>
<tr>
<td>15h00 – 16h30</td>
<td>12. Open Science</td>
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REQUIRED PRE-READINGS

1. What do we want to know
(what is=facts; whether there is a relationship, why is there a relationship=theory; impact of relationship)


2. Inductive research (case study) versus deductive research (theory testing)


3. Experiments, pre-registration, difference-in-difference

• (Pre-registration)
• https://aspredicted.org/

4. What can be concluded from statistical significance?

5. Threats of true results and robustness checks (e.g., sampling; control variables; nonlinearity)


6. Endogeneity


7. Specification Curve


8. Impact Measures of Variables in Machine Learning


9. Replications


10. Meta-Analysis and effect-size measures


11. Relevance for Science and Practice
(Rigor versus relevance)

12. Open Science