Guest Lecture

Conducting User Studies in IS and CS

Mobile Business II (SS21)

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Chair of Mobile Business & Multilateral Security
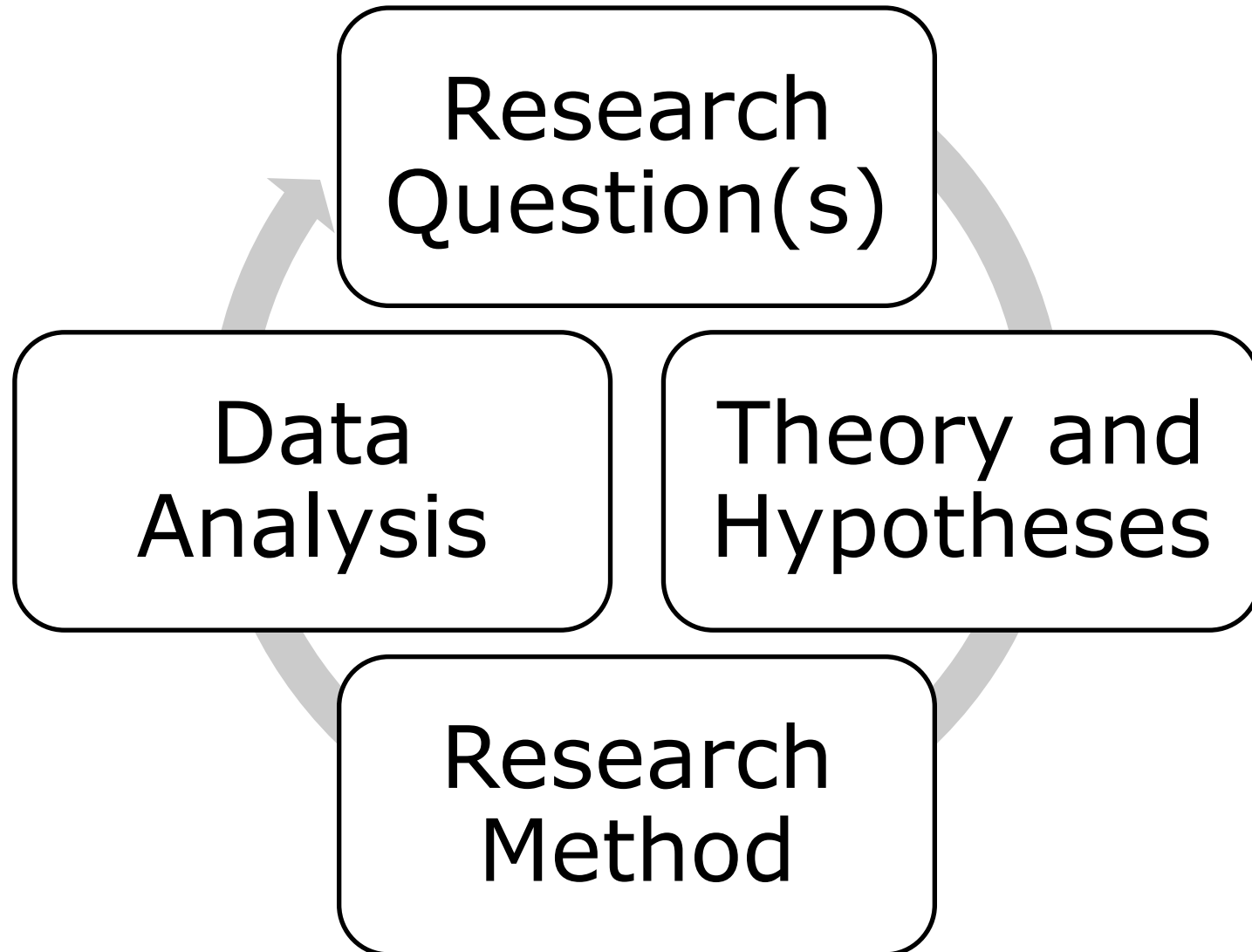**Goethe University Frankfurt a. M.**

1. Why do you need to know all of this

2. Structure your thoughts – A generic research cycle

3. The research question

4. The "theory" and hypotheses

5. The research method

6. The data analysis

Brainstorming

Needs to be

- **practically motivated**
  - question needs to address an important issue on a societal, organizational or individual level
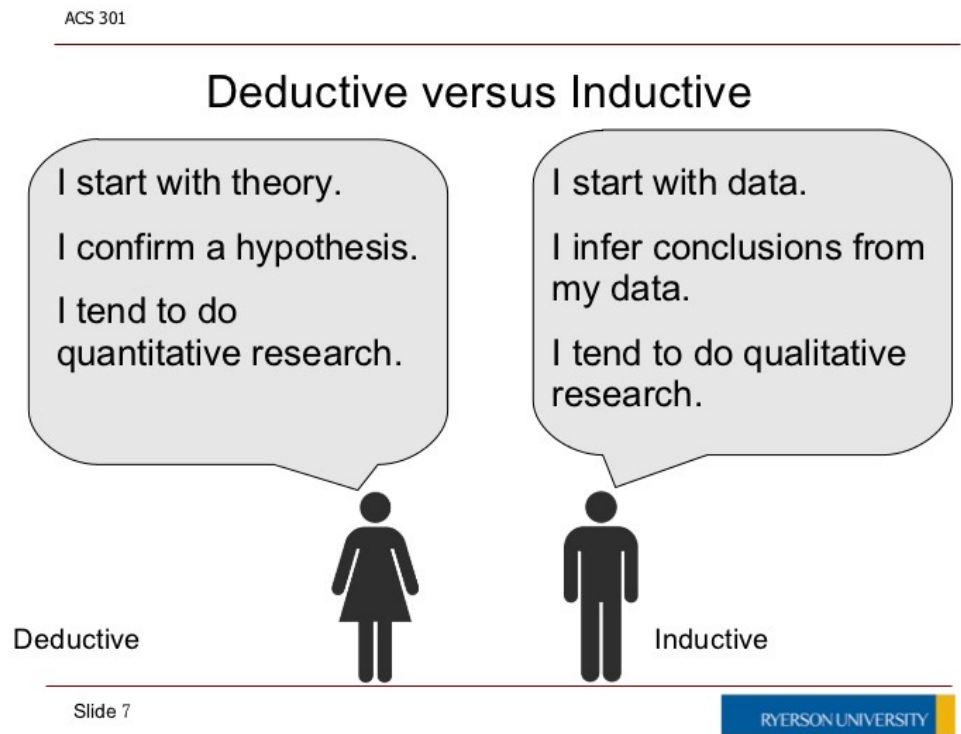
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AND / OR

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- **theoretically motivated**
  - question needs to be "new" (i.e. should not be posed exactly the same way before → would be replication research) and add insights to the current body of knowledge

- "… we define theories to include the definitions of the relevant variables, the relationships among those variables, the justifications for those relationships, and the boundaries of the theory" [p. 686](Wiesche et al., 2017)

- Hypotheses describe relations between variables

- There are several things to discuss at that point such as ontology (*what do you assume about the state of the real world*) and epistemology (*what do you assume about knowledge and knowledge generation*); skip details due to time constraints

- A theory can provide the *frame* for answering the research question
- **deductive** approach → given theory leads to data

- Sometimes you derive theories or model in your research
- **inductive** approach → data lead to a theory

ACS 301

Deductive versus Inductive

I start with theory.
I confirm a hypothesis.
I tend to do quantitative research.

I start with data.
I infer conclusions from my data.
I tend to do qualitative research.

Deductive   Inductive

Slide 7   RYERSON UNIVERSITY

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intro-to-research-methods-research-strategy-7-728.jpg?cb=1226472849

- ▪ How are you addressing your research question?

Quantitative research methods	Qualitative research methods
Explanatory (theory testing, remember: deduction)	Exploratory (theory generation, induction)
Usually numbers	Usually text or observations
Surveys, experiments (important: cross-section vs. longitudinal / experimental vs. non-exp.)	Interviews, focus groups, field observations, etc.
Univariate vs. multivariate regression techniques (e.g. OLS vs SEM) Parametric vs. non-parametric tests etc.	Content analysis (e.g. Mayring), Grounded theory method, etc. Coding techniques

- Determined by the research method

- Vast universe of guidelines/books/etc. on how to do
  - experimental data analyses (e.g. ANOVA)
  - online surveys (e.g. structural equation modeling)
  - grounded theory
  - etc...

- In my field of research, online surveys or experiments are the most common research method for quantitative research methods

- Used to gather perceptions, opinion, concerns and behaviors of individuals within a specific context with instruments (most common: questionnaires)

- Oftentimes cross-sectional data (data gathered at one point in time, rarely longitudinal)

- Things to consider for students:
  1. Sample – do not use student samples unless your research question specifically targets students
  2. Costs – market research institutes or panel providers are expensive → consider alternatives and the time to gather data (e.g. GESIS Panel https://www.gesis.org/en/gesis-panel/gesis-panel-home/)
  3. Use existing instruments / constructs for questionnaires – reliability and validity reasons
  4. Map your questions with the overall research questions and hypotheses – can you address each aspect you need to answer the research question?
  5. …

  Many other things to consider, however we need to finish with…

How would you structure a *possible* thesis against the backdrop of these insights?

1. Introduction: Motivation (practical and theoretical) → RQ(s)

2. Theoretical Background (Key Definitions...) & Related Work

3. Framework / Theory / Research Model

4. Research Method
   1. Describe method: I did SEM / or did interviews with GTM
   2. Questionnaire
   3. Data
5. Results
6. Discussion: mapping to RQs, interpretation, limitation and fw
7. Conclusion

A few final tips (II)

1. Think about using Tex instead of Word

2. Use a citation/reference manager (e.g. Mendeley)

3. Don't forget to employ a constant backup solution

4. Talk to your supervisor! A constant exchange over such a long period of time (e.g. 4 Months at FB02) is crucial

- Wiesche, M., Jurisch, M. C., Yetton, P. W., & Krcmar, H. (2017). GROUNDED THEORY METHODOLOGY IN INFORMATION SYSTEMS RESEARCH. *MIS Quarterly*, *41*(3), 685–701. https://doi.org/10.25300/misq/2017/41.3.02

Thank you!

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