LEUPHANA
UNIVERSITÄT LÜNEBURG

Institute of Management & Organization

Thesis Guidelines

Quantitative Research

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Topic

The thesis contributes to the theoretical advancement of a particular topic. Accordingly, the thesis has a theoretical focus and seeks to answer questions that help to understand "why" or "under which conditions" certain phenomena in the domains of psychology, management, and organizational behavior occur. The thesis contributes to a current discussion or debate in these domains. You can find relevant discussions or debates in journals such as Journal of Applied Psychology or Journal of Personality and Social Psychology. You'll find a list of relevant journals below. Importantly, the thesis focuses on one particular research question. It is not a general or historical literature review.

You can do replication studies if you provide a good justification why it is important to do so and if you follow the standards for replication studies (see Editorial Psychological Science; http://www.psychologicalscience.org/publications/replication). Furthermore, part of your thesis can be a replication of previous findings and adding mediators or moderators that advance the theoretical understanding of under which conditions effects are stronger, weaker, reverse, or disappear.

Structure

Any Bachelor or Master thesis has the structure of a scientific journal paper with the following parts:

1. Introduction
2. Theory
3. Method
4. Results
5. Discussion

Introduction and Theory

- On the first page (or 1.5 pages), introduce the reader very briefly to the core research question, clarify what will be done and why this is important (i.e., a brief "funnel" or "hourglass" approach").
- Then, use the approach of a funnel again: Start with the phenomenon and lead the reader to the research question. Describe the phenomenon and state the gap in the literature that you are going to address in your study.
- State explicitly the theoretical relevance and the contribution / add-on value of your study.
- Build on existing theories to develop your hypotheses.

Method

- Longitudinal design: minimum of 30 participants with multiple observations (daily morning/evening, weekly; minimum of 200 observations).
- Cross-sectional design: dyadic (e.g., leaders and subordinates) or teams with different data sources
- Field experiment: minimum of 100 participants and pre-/post-intervention measurement (calculate in G*Power for adequate sample sizes).
- Experimental design: calculation based on G*Power and conservatively estimated population effect sizes, minimum of 30 participants per condition (better 40-50 per condition).

Results and Analyses

- Start with the most important results up front
- If possible, include manipulation checks
- Internal consistency based on Cronbach's Alpha
- Descriptive statistics (mean, sd)
- Intercorrelations
- Explorative factor analysis
- Linear regression
- ANOVA, ANCOVA, MANOVA
- Bachelor thesis: Mediation using bootstrapping / Monte Carlo or Moderation
- Master thesis: 2 mediators, 2 moderators, or 1+1 (mediator + moderator)

Discussion

- Theoretical implications
- Limitations
- Future Research
- Practical implications

Important: Plagiarism in any form will not be tolerated and will automatically result in a failed attempt. Plagiarism is a serious academic misconduct. Regardless of intent, the failure to provide proper acknowledgment of your use of others' work constitutes plagiarism. Plagiarism is defined as the submission or presentation of work, in any form, that is not a student's own, without acknowledgment of the sources.

We will check your thesis using the software PlagScan. For this purpose, you need to temporarily transfer the copyright to the university by signing the form that you'll find in the appendix of this document.

Style

Use the Publication Manual of the American Psychological Association (APA) as your main reference for the style of your thesis and scientific paper. In particular, refer to the APA manual regarding

1. Scholarly Writing and Publishing Principles
2. Paper Elements and Format
3. Journal Article Reporting Standards
4. Writing Style and Grammar
5. Bias-Free Language Guidelines
6. Mechanics of Style
7. Tables and Figures
8. Works Credited in the Text
9. Reference List
10. Reference Examples

You can also use:

- Concise Guide to APA Style" (7th edition), which is "the official APA style guide for students"
- Mastering APA Style (ISBN 9781433805578)

There is a helpful online resource from Purdue University, USA and their online writing lab that is freely and openly accessible here:
https://owl.purdue.edu/owl/research_and_citation/apa_style/apa_formatting_and_style_guide/general_format.html

You might deviate from the APA standards in the following ways:

1. 1.5 spaced (instead of double spaced)
2. numbered headings
3. include an additional (first) title page that does not follow APA guidelines but includes your name, student ID number, university logo, etc.
4. Some supervisors ask for page numbers to references even if it is not a quote. Make sure that you check with your supervisor what they prefer.

Language: English or German

Length
Bachelor thesis: 25-30 pages (excluding tables, figures, and references)
Master thesis: 30 (- max. 40) pages body (excluding tables, figures, and references)

Exposé / pre-registration
You need to submit an exposé (or pre-registration document), which includes information about your research question, the theoretical model, and an overview of your hypothesis. Furthermore, it includes information about your method (procedure, measurements, analytical approach). Pre-register your study with Open Science Framework (OSF), where multiple pre-registration templates with guiding questions are available. Feel free to consult your supervising professor for a useful pre-registration template.

Feedback
Your thesis is part of your scientific training. Therefore, some supervisors offer you the opportunity to send them each part of your thesis once to receive comments and feedback on the parts. Make sure that you have sufficient time to incorporate the comments and feedback into the final version of your thesis. Check with your supervisor whether they offer this opportunity.

Journals (not exhaustive)
Academy of Management Journal
Academy of Management Review
Annual Review of Psychology
Annual Review of Organizational Psychology and Organizational Behavior
Entrepreneurship Theory & Practice
Journal of Applied Psychology
Journal of Business Venturing
Journal of Management
Journal of Management Studies
Journal of Organizational Behavior
Journal of Personality and Social Psychology
Organizational Behavior and Human Decision Processes
Personnel Psychology

Psychological Bulletin
Psychological Science

Use PsycINFO and Web of Science for your literature search.
Check VHBjourqual for the quality of scientific journals. Refer mostly to A+, A, or B journals.

Evaluation criteria

Introduction and Theory

- Clarity and structure
- Hypotheses are developed from important and relevant theorizing
- Writing style: "Keep it simple" (KIS)
- Provide relevant information—neither less, *nor* more.

Method

- Clarity and conciseness
- Information on procedure, variables, manipulations (if any), exclusions, etc.
- Study would be replicable with available information

Results and Analyses

- Statistically and scientifically accurate
- Presented correctly and concisely

Discussion

- Interesting avenues for future research that build on limitations
- Go beyond simply summarizing the main findings again
- Evaluate the paper's core contributions and novelty

Tips and Tricks

In general: A good paper tells a story. So, stick to your story and avoid subplots. K.I.S. = Keep it simple. Write straightforward. Make clear what the main point / research question and novel contribution of your paper is. Focus on novelty. Most success is likely for: Novel Effect > Mediation > Moderation. Combine these freely. Include a section on novel contribution (this should features verbs like this: "expand, extend, establish").

Furthermore, develop a macrostructure of your paper. For example, the order in which you present your reasoning and hypotheses can be used to structure the order in which you present your measures in methods, the order in which you present your results, and how you present your discussion.

The abstract is a summary encompassing 100-250 words, which offers the reader a short overview of the paper's objective, approach, and result(s). It includes information about the research question, theory, methods, and results, and theoretical implications. Use short sentences.

The following principles can help you to structure your introduction:

- State why your topic is of theoretical and/or practical importance

    - e.g.: Researchers agree that the ability to learn from experience is a key competence for business owners.
- State the theoretical gap that you identified in the literature
    - e.g.: However, the issue how business owners actually learn from experience is not yet fully understood.
- State what your research question / main point is
    - e.g.: We suggest that […] learning strategies help to understand the underlying mechanisms of […] learning from experience and may provide an answer to the central question of our study: What processes turn experience into knowledge?
- State explicitly what your add-on value is
    - e.g.: We seek to add to/expand previous research by conceptualizing the learning strategies […] and by relating these learning strategies to knowledge and success.

General rules are:
Be consistent!

- Do not use synonyms for technical terms!
- Use the precise word and stick to the word for your constructs (also tables, figures)! Use one word/terminology and use only this one.
- All variable names are exactly alike throughout the text!

Keep it simple!

- Prefer simpler to more complicated words!
- Use simple short sentences!
- Use active voice!
- Omit needless words (Strunk & White)
- Put statements in the positive form!
- Write with nouns and **verbs**!
- Write in a way that comes naturally!
- Do not use abbreviations!
- Test every sentence whether it is really related to the main topic! If you have written it once, you can now write it better. → polish again and again.
- Use definite, specific, concrete language!
- Use examples, but examples should be supplemental and not substitutes for clear writing and theory.
- Write paragraphs that are longer than one sentence but shorter than one page!
- Any sentence should not be longer than three lines.
- Develop your own „Phrase Bank“ with verbs/synonyms to draw from:
    - e.g., more: „increase, bolster, heighten, elevate, facilitate, foster“
    - less: „reduce, impair, denigrate, lower, attenuate, alleviate, exacerbate.“
    - Mediation: „accounted for, ____which in turn ___, mediated the link from..., led to higher … that in turn led to lower …
- Do not re-invent the wheel. Copy phrases/expressions that you like (phrases! **not** content).
- Copy structure, setups, reasoning from authors that you like (again, no plagiarism).
- Ask yourself repeatedly: What does the reader know up to this point?
- Write about *ideas* not about researchers:

- Preferably: „The listing price for a car functions as an anchor and biases expert car salespeople (Mussweiler et al., 2001)“ rather than: „Mussweiler and colleagues... / Previous research... has shown that the listing price for a car...“

In other words, the Introduction introduces and raises the interest of the reader. Prof. Roy Baumeister has suggested to imagine being on a date and attempting to seduce your reader (luring him/her in). So, start narrow and with main issue. Do not provide an extensive overview or historic summary of the field. You can write one paragraph on the domain of interest, one paragraph on the gap in the literature and what your paper is about (your paper's purpose), then state your research question and state explicitly why your paper is an important add-on to research and, if applicable, practice. Important: Stay with your main point throughout your paper.

Use the following resources or resources provided by your supervisor to learn how to write scientifically.

- Bem, D. J. (2002). Writing the empirical journal article. In Darley, J. M., Zanna, M. P., & Roediger III, H. L. (Eds). *The Complete Academic: A Career Guide*. Washington, DC: American Psychological Association. [beware this is written prior to the replication crisis!]
- Cone, J. D., & Foster, S. L. (2003). Dissertations and theses from start to finish: Psychology and related fields. Washington: APA.
- Feldman, D. C. (2004). The devil is in the details: Converting good research into publishable articles. Journal of Management, 30, 1-6.
- Huff, A.S. (1999). Writing for scholarly publication. Thousand Oaks: SAGE Publications.
- Huff, A.S. (2009). Designing research for publication. Thousand Oaks: SAGE Publications.
- Sternberg, R. J. (1993). *How to win acceptances by psychology journals: 21 tips for better writing*. APS Observer.
- Strunk & White (1963). *The elements of style*. Penguin.
- Theisen, M. R. (2017). Wissenschaftliches Arbeiten: Erfolgreich bei Bachelor- und Masterarbeit (17., aktual. u. bearb. Aufl.). München: Vahlen.
- www.uni-essen.de/schreibwerkstatt/trainer

Lists of Evaluation Criteria

<u>Introduction</u>

- (Formulation of the) research question
- Clarity of the purpose
- Justification of the research question (e.g. embedding in current debate, showing a theoretical gap)
- Presentation of scientific relevance
- Presentation of practical relevance
- General understanding and reflection of the problem

<u>Theory</u>

- Presentation of the theoretical background

- Development and justification of the hypotheses
- Continuous and interconnected structure and line of argumentation /consistent structure and conceptually coherent line of argumentation
- Scope of the literature considered
- Selection and review of the literature
- Description / definition of the constructs
- Choice / justification of the theoretical background
- Presentation of the theoretical background
- Justification of the hypotheses
- Formulation of the hypotheses (e. g. pattern for moderation; daily specificity)

Method
- Methodological implementation of the empirical study
- Operationalization of variables
- Selection and scope of the sample
- General organization of data collection
- Clear and well documented presentation of the procedure
- General methodological rigor / soundness of the methodology

Data analysis
- Suitability of statistical analysis methods / appropriateness of the statistical analyses
- Correctness in the application of statistical method / correct application of the statistical methods
- Complexity of data evaluation
- Completeness of the data evaluation

Presentation of the results
- Correct presentation of the results
- Systematic presentation of the results
- Comprehensibility when presenting the results /clarity and conciseness of results

Discussion
- Interpretation of the results with regard to research question and theory
- Presentation of the theoretical implications
- Adequate discussion of the limitations of the research
- Derivation of ideas for further research
- Derivation of practical recommendations or ideas of applying the results

Aspects of the presentation
- Linguistic expression
- Layout of the text
- Well-formatted and easily interpretable tables and figures (APA-compliant)
- Accuracy of citations (APA-compliant)
- Correctness of the bibliography (APA-compliant)

General
- Structural coherence across the different sections of the thesis
- Working method and personal initiative

- Independence in the development of the research question and hypotheses
- Independence in planning the study
- Practical preparation for the study
- Procedure of data collection
- Independence in the interpretation of the findings

Appendix

Preregistration form

Study Information
Title of the study/project
…
Authors
…
Research questions
…
Study design & randomization
Study type ***Describe the overall design of a single study (check corresponding box).*** ***Complete a separate preregistration in case of multiple experimental designs.***
☐ Experiment - A researcher randomly assigns treatments to study subjects, this includes field or lab experiments. This is also known as an intervention experiment and includes randomized controlled trials. ☐ Observational Study - Data is collected from study subjects that are not randomly assigned to a treatment. This includes surveys, "natural experiments," and regression discontinuity designs. ☐ Meta-Analysis - A systematic review of published studies. ☐ Other
• *Study design (e.g. two-group, factorial, randomized block, repeated measures; between (unpaired), within-subject (paired), mixed design)?* • *Any counterbalancing?* • *Randomization how and at what level?*
…
Variables ***Provide manipulation and measured variables as used in the study separately (by providing experimental software files, questionnaires, wording of instructions, etc.).***
Manipulated variables
• *Independent variables with all their levels* • *Within or between?* • *Orthogonal or nested?*
…
Measured variables & indices
• *Outcome measures, predictors, covariates, moderators, etc.* • *Indices: measures and combination (e.g. mean, factor analysis)?*
…
Exploratorily measured variables (optional)
…
Hypotheses (numerated)
• *For each of the research questions: One or multiple specific and testable hypotheses.* • *Directional or non-directional? Predicted direction? Predicted effect size?* • *In case of multiple predictions: Which theory predicts what?* • *[Expected shape of] interactions?* • *Manipulation checks?*
…
Analysis plan, inference criteria
Analysis plan (numerated corresponding to hypotheses) • *Type of model (e.g. ANOVA, multiple regression, SEM, etc.) and specification of the model (predictors? outcomes? covariates?)* • *Interactions? Accounting for multiple testing?* • *Assumptions of analyses, plans for alternative / corrected analyses if assumptions are violated?* *Inference criteria*

- *Specification of p-values, Bayes factors, priors, specific model fit indices, cut-off criteria, reliability criteria for item inclusion in scale, etc. (where appropriate).*

…

Follow-up analyses (optional)

Follow-up analyses (numerated corresponding to hypotheses, if appropriate)

- *Any confirmatory analyses to follow up on effects in statistical model (e.g. subgroup analyses, pairwise or complex contrasts, follow-up tests from interactions)?*

…

Exploratory analyses (optional)

- *Exploratory test: prediction is not made up front / there are multiple possible tests used*
- *Great way to form a new confirmatory hypothesis, which could be registered at a later time.*

…

Blinding

Blinding describes who is aware of the experimental manipulations within a study. Mark all that apply.

☐ No blinding is involved in this study.
☐ For studies that involve human subjects, they will not know the treatment group to which they have been assigned.
☐ Research personnel who interact directly with the study subjects (human / non-human) will not be aware of the assigned treatments.
☐ Research personnel who analyze the data collected from the study are not aware of the treatment applied to any given group.

Existing Data *(check corresponding box).*

☐ Registration prior to creation of data
☐ Registration prior to any human observation of the data
☐ Registration prior to accessing the data
☐ Registration prior to analysis of the data
☐ Registration following analysis of the data

Explanation of existing data (optional)

- *Steps taken to ensure any pattern and / or summary statistics in existing data are unknown (limited access, who observed the data, …)?*
- *Assure that the line between confirmatory and exploratory analysis is clear*

…

Data collection procedures

- *Population (inclusion & exclusion rules)? Recruitment effort? Payment? Timeline?*

…

Sample size & stopping rule

- *Sample size? How many units? Clustered or multilevel design: how many units at each level of the analysis?*
- *Power analysis based on an assumed effect size using G*Power or based on an arbitrary constraint such as time, money, or personnel.*
- *Data collection termination rule?*

…

Procedure

Procedure including order of presentation. Indicate where full study material can be found.

…

Transformations

If you plan on transforming, centering, recoding the data, or will require a coding scheme for categorical variables, please describe that process.

…

Data exclusion

How will you determine which data points or samples (if any) to exclude from your analyses? How will outliers be handled?

…

Missing data

How will you deal with incomplete or missing data?
…
Other (optional) ***Study material and item collection could be inserted here.***
…
Scripts ***Upload an analysis script with clear comments (optional – can be used in place of written analysis plan)***
This optional step is helpful in order to create a process that is completely transparent and increase the likelihood that your analysis can be replicated. We recommend that you run the code on a simulated dataset in order to check that it will run without errors.
…
References
Provide references to all sources you cite in this pre-registration
…

Appendix

Transfer of copyright for PlagScan

Nutzung der Plagiatserkennungssoftware PlagScan
Lehrende der Leuphana Universität Lüneburg können die Plagiatserkennungssoftware PlagScan nutzen, um schriftliche Arbeiten auf Originalität zu prüfen. Bei Auffinden von möglichen Plagiaten ist eine zusätzliche inhaltliche Bewertung durch die Lehrenden erforderlich, da die Plagiatssoftware nur Textähnlichkeiten und Textübereinstimmungen finden kann. Die schriftliche Arbeit gilt nur dann als „nicht bestanden", wenn Umfang und Inhalt des vorgeworfenen Plagiats keine eigene wissenschaftliche Leistung mehr erkennen lassen.

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Damit die Plagiatserkennungssoftware von den Lehrenden eingesetzt werden kann, sind beide unten stehenden Erklärungen durch die/den Verfasser_in zu unterschreiben und idealerweise direkt in die schriftliche Arbeit einzubinden.

1) Erklärung zur temporären Übertragung der Urheberrechte
„Ausschließlich zu Zwecken der Plagiatsüberprüfung meiner Arbeit durch die Universität und von dieser beauftragten Dritten erkläre ich hiermit mein Einverständnis mit der Verwendung der eingereichten Arbeit für 90 Tage und übertrage an die Leuphana Universität Lüneburg hiermit für diesen Zeitraum sämtliche weiterübertragbaren Urheber-, Leistungsschutz-, Persönlichkeits- und sonstigen Rechte, die im Zusammenhang mit der Erstellung der eingereichten Arbeit entstanden sind, insbesondere, aber nicht ausschließlich, zu Zwecken der Vervielfältigung, Verbreitung, Speicherung und Archivierung."

_____
Unterschrift Student_in bzw. Promovend_in

2) Erklärung über die Übereinstimmung der gedruckten und elektronischen Fassung
Hiermit versichere ich, dass die gedruckte und die elektronische Fassung der vorliegenden Arbeit – mit Ausnahme der personenbezogenen Angaben – übereinstimmen.

_____
Unterschrift Student_in bzw. Promovend_in