Lucerne University of
Applied Sciences and Arts

# HOCHSCHULE
# LUZERN

**Business**

FH Zentralschweiz

# M10: Practical Exercises in Research Methods

12.07.2024

| General Information | |
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| **Module Code** | W.MSCBF_FM02.08_EN |
| **Programme** | Master of Science in Banking and Finance |
| **Type of Module** | Core module in focus programme |
| **Level of Module** | Intermediate |
| **ECTS Credits / Workload** | 9 ECTS Credits (270 hours) |

| Module Dependencies | |
| --- | --- |
| **Pre-requisites** | In module 9, students have acquired the means which enable them to work using empirical research methods and they have learnt to work with statistics software at an elementary level. |
| **Follow-up modules** | Modules 11 & 12 |

## Module Aims

- Consolidation of active methodological knowledge (see module 9) by applying it in independent projects (includes acquisition of additional knowledge, where required)
- Consolidation of passive methodological knowledge through critical study of research papers (includes acquisition of additional knowledge, where required)
- Connecting methodological competence with specific applications throughout the whole research process; employing a pragmatic/differentiated approach
- Supplementing the curriculum of module 9 with additional knowledge, as required (methods, techniques, working strategies, tools, documentation, and presentation)

**Parts of the course:**

**Research project (6 ECTS)**
With a supervisor from the HSLU (list provided by the course coordinator), the goal will mainly be replicating a result from a reserach paper related to the course. There is also possibility of a new small research projects (instead of a replication) if agreed with the supervisor. The project will be done in teams of 3-4 students.

Report and presentation will be graded by the supervisor at the end of the semester.

**Exercise sets (3 ECTS)**

Exercise Set 1: Application of linear regression, Dr. Sandra Stupar
In three sessions, students will look at several applied econometrics papers. Few new topics will be introduced in the class, and the knowledge from Course 9 will be applied. A good amount of self study is expected, in particular papers will be analysed in details and questions answered by the students mostly outside of the class.

Exercise Set 2: Statistical exercises, Dr. Simon Broda

Students will work on exercises in Python during two computer lab sessions. The topics are
- Time series analysis, and
- Cross-sectional analysis

Students have to submit their solutions to Ilias in the form of Jupyter notebooks. They will not be graded, but completing them is a requirement for admission to the final examination.

Total exam for the Exercise Set part will last for 1h. Approximate division will be 40 min for the Exercise Sets 1 and 20 min for Exercise Sets 2.

## Learning Outcome 1

- Consolidation of the methodological knowledge acquired in Module 9 through practical application.
- Consolidation of the methodological knowledge acquired in Module 9 by means of methodological analysis of published research.
- Students have to work on a research study, in small groups and on predefined topics. The goal is to get used to academic research standards and be prepared for Modules 11 (Research Project) and 12 (Master Thesis). The case study gives the opportunity to apply the research methods introduced in Module 9.

| | Importance | Relevant NQF-Descriptors |
|---|---|---|
| Subject knowledge and skills: The students can read, understand, interpret, and conduct quantitative econometric research. In particular, the students can (i) correctly interpret statistical output ii) understand and critically assess the methodological set-up; iii) combine practical and methodological knowledge; iv) understand potential pitfalls of empirical research and can apply remedies for them. | high | knowledge; application; judgement |
| Methodology: The students i) apply their knowledge to time series and cross section analysis using software; ii) choose appropriate quantitative methods; iii) use their methodological knowledge to critically assess and discuss research; iv) understand and can replicate individual steps of academic research; v) understand and can apply the basics of analysis of variance (ANOVA); (vi) understand the multiple testing problem and can apply remedies for it. | medium | application; judgement |

## Content Outline

### Exercise Set 1: Analyzing research papers, Dr. Sandra Stupar
• Study of research papers and providing answers to key questions regarding the methodology used
• Multiple regression with numerical and categorical data
• Multiple testing: problem and solutions
• Analysis of variance (ANOVA)
• Hedonic pricing models
• Empirical test of asset pricing models

### Exercise Set 2: Statistical exercises, Dr. Simon Broda
• Time series analysis
• Cross-sectional analysis

### Case Study
Students have to work on a research study, in small groups and on predefined topics. The goal is to get used to academic research standards and be prepared for Modules 11 & 12. The case study gives the opportunity to apply the research methods introduced in Module 9.
Mandatory components:
• State of research (structured literature review) concept
• Data collection and processing
• Evaluation and interpretation
• Documentation of results (written report)
• Presentation

All group members should be involved in all stages. This should be documented in relation to the supervisor in a suitable form. In case of documented uncooperative behaviour of one or several team members, a maximum grade of 1.0 can be subtracted from the final grade leading to individual grades for the project team members. Further, repeated uncooperative behaviour in group projects can lead to a formal reprimand by the head of the studies and can lead to the exclusion from the programme.

## Teaching and Learning Methods

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| **Contact Hours** | presentations; discussion; case studies; group work |
| **Directed Study** | group work |

## Workload

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| **Contact Hours** | 22 lessons / 16.5 hours (6.1%) |
| **Directed Study** | 73 lessons / 54.75 hours (20.3%) |
| **Private Study** | 198.75 hours (73.6%) |

## Assignments and Assessments

| Assessment Type | Quantity | Weight | Form | Evaluation Type | Time |
|---|---|---|---|---|---|
| Written examination | 60 minutes | 33% | closed book | grades | during exam weeks |
| Written group assignment | | 57% | introductory dissertation | grades | during semester |
| Oral group assignment | | 10% | presentation | grades | during semester |

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