



Research Methodology Session F Module II, 2024-2025

Course Information

Instructor: Fangyuan Ma

Office: PHBS Building, Room 705

Phone: 86-755-2603-4885

Email: fangyuanma@phbs.pku.edu.cn

Office Hour: Monday, Tuesday, and Thursday 15:30 – 16:30 or by appointment

Teaching Assistant: TBD

Email:

TA Office Hour:

Classes:

Lectures: Thursday, 10:30-11:20

Venue: TBA

Course Website:

PHBS Course Management System (CMS): cms.phbs.pku.edu.cn; login through yun.phbs.pku.edu.cn. Search for "Research Methodology- 2024M2-fym" and enrol with the code of "RM24M2FYM".

1. Course Description

1.1 Context

Course overview:

This course will equip students with essential tools and a solid understanding of cross-sectional and panel data empirical methods applicable to *finance* research. Students will be introduced to a diverse array of techniques commonly used in *empirical* studies, fostering their ability to apply these methods effectively.

Upon completing this course, students will be able to:

- Understand causality and identify causal effects.
- Interpret the results of standard regression methods (e.g., OLS) and recognize their limitations.
- Explore commonly used techniques to address OLS limitations, such as instrumental variables and difference-in-differences.
- Evaluate the advantages and disadvantages of various empirical methods.

Please note that this course will NOT cover:

- Theoretical or modeling research methodologies.
- Time series methods.
- The derivation of econometric or statistical properties of various estimators.
- Programming or coding details.

The objective of this course is to assist students in preparing their graduation thesis, particularly in selecting the appropriate empirical methods. To achieve this goal, the course will consist of three major components:

- Lectures: These sessions will introduce key concepts and knowledge related to empirical research methods.
- Group Presentations: Students will present a recently published empirical study in the format similar to thesis defenses. This will allow them to analyze and discuss the research, fostering critical engagement with current empirical work.
- Individual Research Proposals: Each student will write a proposal outlining a potential empirical research idea, providing an opportunity to develop and articulate their research approach.

Prerequisites:

This course presumes that students have taken master-level courses in corporate finance and econometrics.

1.2 Textbooks and Reading Materials

Course materials including reference notes and paper assignments will be posted on the course website.

Reference books:

Mostly Harmless Econometrics, by Angrist, Joshua D., and Jorn-Steffen Pischke. 2009. Princeton University Press, New Jersey. [Angrist-Pischke]

Econometric Analysis of Cross-Section and Panel Data, by Wooldridge, Jeffrey M. 2010. MIT Press, Massachusetts, Second Edition. [Wooldridge]

Econometric Analysis, by Greene, William H. 2011. Prentice Hall, N.J., Seventh Edition. [Greene]

Roberts, Michael R., and Toni M. Whited. 2011, "Endogeneity in Empirical Corporate Finance," University of Rochester, working paper, <http://ssrn.com/abstract=1748604>. [Roberts-Whited]

2. Learning Outcomes

2.1 Intended Learning Outcomes

Learning Goals	Objectives	Assessment (YES with details or NO)
1. Our graduates will be effective communicators.	1.1. Our students will produce quality business and research-oriented documents.	YES
	1.2. Students are able to professionally present their ideas and also logically explain and defend their argument.	YES
2. Our graduates will be skilled in team work and leadership.	2.1. Students will be able to lead and participate in group for projects, discussion, and presentation.	YES
	2.2. Students will be able to apply leadership theories and related skills.	YES
3. Our graduates will be trained in ethics.	3.1. In a case setting, students will use appropriate techniques to analyze business problems and identify the ethical aspects, provide a solution and defend it.	
	3.2. Our students will practice ethics in the duration of the program.	
4. Our graduates will have a global perspective.	4.1. Students will have an international exposure.	

5. Our graduates will be skilled in problem-solving and critical thinking.	5.1. Our students will have a good understanding of fundamental theories in their fields.	YES
	5.2. Our students will be prepared to face problems in various business settings and find solutions.	YES
	5.3. Our students will demonstrate competency in critical thinking.	YES

2.2 Course specific objectives

The objective of this course is to assist students in preparing their graduation thesis, particularly in selecting the appropriate empirical methods. By providing a comprehensive understanding of various empirical techniques, the course aims to empower students to make informed decisions about their research approaches. Additionally, students will learn to critically analyze existing literature, enabling them to identify gaps and formulate relevant research questions that contribute to their field of study.

2.3 Assessment/Grading Details

The course grade will be determined by the following scheme:

Individual research proposal	60%
Group presentation	30%
Class attendance & participation	10%
Total	100%

Individual Research Proposal: Each student will develop a research proposal, ranging from 3 to 10 A4 pages, outlining a potential empirical research idea using the tools discussed in the course. The proposal should include the following components:

- A Brief Motivation and Background: An introduction to the topic that highlights its significance and relevance in the field.
- A Clear Research Question: A specific, well-defined question that the research aims to address.
- Literature Review and Contribution Assessment: A brief review of relevant literature, along with an evaluation of how the proposed research will contribute to the existing body of knowledge.
- Empirical Design: An outline of the empirical approach to be used. This should detail what an ideal empirical test for the research question would look like, identify potential challenges related to causal identification, and discuss how these challenges will be addressed through the proposed methods.
- Data Availability: A description of potential sources of information required for the analysis, including relevant datasets.
- Reference List: A comprehensive list of all references cited in the proposal.

Group Presentation: Students will form groups of five members. Each group will select one paper from the suggested list, read and analyze it, and then deliver a 20-minute presentation in class. The presentation should cover the following key elements:

- Motivation and Background: Clearly present the motivation behind the study.
- Research Question: State the main research question addressed in the paper.
- Hypothesis: Outline the hypotheses being tested.
- Data Source: Describe the data used in the study and its relevance.
- Empirical Design: Summarize the empirical methods employed in the research.

- Findings and Interpretations: Present the main findings and provide interpretations.
- Contribution and Limitations: Discuss the study's contributions to the field and any limitations identified by the authors.

While it's not necessary to cover every detail from the paper, the presentation should convey the essential points so that a coherent and complete story is told. Following the presentation, there will be a mini session for discussion and Q&A. All students are expected to read the assigned articles and prepare for an engaging discussion.

2.4 Academic Honesty and Plagiarism

It is important for a student's effort and credit to be recognized through class assessment. Credits earned for a student work due to efforts done by others are clearly unfair. Deliberate dishonesty is considered academic misconducts, which include plagiarism; cheating on assignments or examinations; engaging in unauthorized collaboration on academic work; taking, acquiring, or using test materials without faculty permission; submitting false or incomplete records of academic achievement; acting alone or in cooperation with another to falsify records or to obtain dishonestly grades, honors, awards, or professional endorsement; or altering, forging, or misusing a University academic record; or fabricating or falsifying of data, research procedures, or data analysis.

All assessments are subject to academic misconduct check. Misconduct check may include reproducing the assessment, providing a copy to another member of faculty, and/or communicate a copy of this assignment to the PHBS Discipline Committee. A suspected plagiarized document/assignment submitted to a plagiarism checking service may be kept in its database for future reference purpose.

Where violation is suspected, penalties will be implemented. The penalties for academic misconduct may include: deduction of honour points, a mark of zero on the assessment, a fail grade for the whole course, and reference of the matter to the Peking University Registrar.

For more information of plagiarism, please refer to *PHBS Student Handbook*.

3. Topics, Teaching and Assessment Schedule

Below are the topics that we intend to cover in this course.

- Introduction
 - What we expect from a master's thesis
 - Typical structure of an empirical work
 - How to effectively present an academic paper
- Linear regression and Causality
 - How to interpret OLS regression results
 - Causality and identification
- Panel data and Instrumental variables
 - Fixed effects
 - 2SLS
- Difference-in-difference
 - Treatment effect identification
 - Assumptions and related tests
- Matching and selection
 - PSM
 - Heckman selection model
- Regression Discontinuity

- Sharp vs. fuzzy RD
- Other topics
 - Standard errors
 - Event studies

Here is our tentative schedule. Please note that the schedule is ***subject to changes.***

Date	Lecture topic	Presentations
Nov 14, 2024	Introduction	
Nov 21, 2024	Introduction & Linear regression	
Nov 28, 2024	Linear regression and Causality	Submit Group Membership Set Presentation Order
Dec 5, 2024	Panel data and Instrumental variables	
Dec 12, 2024	Difference-in-difference	Presentation 1
Dec 19, 2024	Difference-in-difference & Matching	Presentation 2
Dec 26, 2024	Matching and selection	Presentation 3
Jan 2, 2025	Regression Discontinuity	Presentation 4
Jan 9, 2025	Other topics	Presentation 5

4. Miscellaneous

I will request every student to make a *nameplate* and display it to on the table in each class. This will help me remember your name and organize class discussions.