Module Outline

Module Code : RE2801
Module Title : Research Methodology in Real Estate
Semester : Semester 2, Academic Year 2022-23
Faculty : A/Prof Tu Yong
Department : Real Estate
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Overview

This module teaches the skills needed for scientific research in real estate and urban studies. It focuses on the applied econometrics. Major topics includes multiple regressions, simultaneous equation models, discrete choice models, time series analysis, differences-in-differences, fixed verse random effects and panel data analysis. The issues of model selections, multicollinearity, heteroscedasticity, autocorrelation, instrumental variables and identification are introduced. It also addresses the whole research process including identifying research problem; defining research questions, objectives and significance; conducting literature review; developing research framework and research design; collecting data and performing survey; conducting qualitative or quantitative analyses; reasoning research results and writing up.

Learning Outcomes

Through this module, students will be able to:
- Understand the whole process of undertaking scientific research.
- Understand the different requirements of dissertation and academic exercise.
- Apply basic econometric analysis and understand how to develop a good research design for quantitative analysis.

Module Prerequisite(s)

RE1702 Real Estate Data Analysis

Module Preclusion(s)

Nil

General Guide & Reading

- Booth, W.C., G.G. Colomb, J.M. Williams, J.B. Bizup, W.T. FitzGerald (2016) The Craft of Research. 4th Edition. Chicago: The University of Chicago Press.
- Wisker, G. (2018) The Undergraduate Research Handbook. 2nd Edition. London: Macmillan International Higher Education.
- Angrist, J. D., & Pischke, J. S. (2014). Mastering'metrics: The path from cause to effect. Princeton University Press.
- Woolridge J.M. (2016) Introductory Econometrics: A Modern Approach, 6th edition, South-Western

Tentative Schedule & Outline

Lesson	Lecture Topics	Learning Points
1	The whole research process	How to undertake a research project.

2	Research motivations/topic, questions, significances	Identify research problems, ask good research questions and establish research significance.
3	Literature review; research framework and research hypotheses: cases	• Understand the roles of a theoretical framework. • Understand the similarities and differences between dissertation and academic exercise.
4	Design data collection; conduct descriptive statistical analysis and present findings: cases	How to collect data to validate original research findings and how to describe the data to justify your research.
5	Design data analysis; interpret result and present findings: case-1	Students will learn how to design empirical analysis to validate your research. The case of hypothesis test using a linear regression
6	Design data analysis; interpret results and present findings: case-2	Student will understand when hedonic housing price model should be used. The case of hypothesis test using a hedonic regression.
7	Design data analysis; interpret results and present findings: case-3	Students will understand how property price indexes are constructed. The case of real estate price index construction using a hedonic regression.
8	Design data analysis; interpret results and present findings: case-4	Students will understand the difference between cross-sectional data and panel data, and apply fixed effect models for panel data analysis. The case of a panel regression.
9	Design data analysis; interpret results and present findings: case-5	Students will understand when and how to propose a research design using DID model. The case of hypothesis test using a DID method.
10	Design data analysis; interpret results and present findings: case-6	Students will understand the difference between discrete data and continuous data; when and how to propose a research design using logit/probit model. The case of a logit/probit model.
11	Design data analysis; interpret results and present findings: case-7	Students will understand the difference between time series data and non-time series data; when and how to propose a research design using time series model. The case of a time series model.
12	Design data analysis; interpret results and present findings: case-8	Students will understand when and how to propose a research design using time series model. The case of a time series co-integration model.
13	Class summary and introduction to high quality research and top academic journals	Students will be familiar with the top academic outlets for high quality impactful research and be able to tell the quality of research from research design and analysis. Differentiate good research from bad one.

Assessment

Assessment Components	Weightage (%)
Group Project	35%
Individual class performance and tutorial participation	20%
Quiz	15%
Class Test	30%
Total	**100**

Academic Honesty & Plagiarism

Academic integrity and honesty is essential for the pursuit and acquisition of knowledge. The University and School expect every student to uphold academic integrity & honesty at all times. Academic dishonesty is any misrepresentation with the intent to deceive, or failure to acknowledge the source, or falsification of information, or inaccuracy of statements, or cheating at examinations/tests, or inappropriate use of resources.

Plagiarism is "the practice of taking someone else's work or ideas and passing them off as one' own" (The New Oxford Dictionary of English). The University and School will not condone plagiarism. Students should adopt this rule - You have the obligation to make clear to the assessor which is your own work, and which is the work of others. Otherwise, your assessor is entitled to assume that everything being presented for assessment is being presented as entirely your own work. This is a minimum standard. In case of any doubt, you should consult your instructor.

Additional guidance is available at:

- http://www.nus.edu.sg/registrar/administrative-policies-procedures/acceptance-record#NUSCodeofStudentConduct
- http://nus.edu.sg/osa/resources/code-of-student-conduct

About me

Dr Yong TU is an associate professor at the Department of Real Estate, the NUS Business School at the National University of Singapore. She is the Post-doctoral Honoree (2006) of the US-based Weimer School of Advanced Studies in Real Estate and Land Economics, the Homer Hoyt Institute, International Corresponding Editor for *Urban Studies* (2015-) and a board member of the Asian Real Estate Society (AsRES 2018-2021). She specializes in housing and real estate economics and teaches a variety of subjects in the related fields for undergraduates, master's and PhD programs. Her research has been published in leading international referred academic journals and won a few best paper awards in the international academic conferences.