

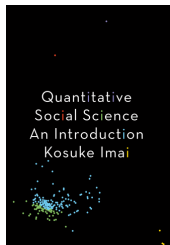
Quantitative Social Science: An Introduction

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I know translation is hard...



Quantitative Social Science

- Massive technological changes \rightsquigarrow Internet and computing revolution
- **Past:** only statisticians and methodologists analyzed data
- **Today:** EVERYONE is analyzing data
Data are affecting our lives too!
- **Past:** government data, national survey data
- **Today:** more of old types of data and lots of new data
 - surveys
 - experiments
 - administrative records
 - social media data
 - GIS data
 - text, images, sounds, videos
- “Big (Social Science) Data” revolution
- We must learn and teach how to analyze data

The Ideas behind QSS

- Data analysis as a necessary tool for social science research
- Data analysis as a useful skill for post-graduate career

Traditional

paper-and-pencil statistics
probability → statistics → data
general → application
toy examples
lectures
exams

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New

data analysis
data → probability → statistics
application → general → application
data from published research
computer labs
projects

The Textbook

- Combines three essential components:
 - 1 social science research
 - 2 methodological concepts
 - 3 computer programming (using R and RStudio)
- Teaches **data analysis** before statistics:
 - 1 Introduction
 - 2 Causality
 - 3 Measurement
 - 4 Prediction
 - 5 Discovery
 - 6 Probability
 - 7 Uncertainty
 - 8 Next
- Contains about 50 data sets from **published social science research**
 - 1 Effects of raising minimum wage
 - 2 Hearts and minds in Afghanistan
 - 3 Forecasting election outcomes
 - 4 Who wrote the Federalist papers?
 - 5 Predicting race from surname
 - 6 Return to political office
- Additional exercises available at <http://qss.princeton.press>

Importance of Quantitative Social Science

- Data analysis matters!
- It affects our policies and livelihood
- Some examples from my research
 - Job training in Afghanistan
 - Use of AI in judicial decision



- Statistics are not just for natural sciences and business
- Social scientists, policy makers, and journalists must analyze data
- Quantitative social science = Social science + Statistics
 - both are important
 - use data analysis to solve problems in the society