

QS101: Introduction to Quantitative Methods in Social Science

Week 21: Recap and Model Specification

Dr. Florian Reiche

Teaching Fellow in Quantitative Methods

Course Director BA Politics and Sociology

Deputy Director of Student Experience and Progression

April 24, 2015

Recap

Model Specification

Recap - Mini Symposium

Mini-Symposium

- ▶ Come together in groups of 3-4

Mini-Symposium

- ▶ Come together in groups of 3-4
- ▶ Elect a team leader who will be collating the information

Mini-Symposium

- ▶ Come together in groups of 3-4
- ▶ Elect a team leader who will be collating the information
- ▶ Elect a presenter who will be presenting a summary of the discussion

Mini-Symposium

- ▶ Present your projects to one another

Mini-Symposium

- ▶ Present your projects to one another
- ▶ Discuss the difficulties you have come across

Mini-Symposium

- ▶ Present your projects to one another
- ▶ Discuss the difficulties you have come across
- ▶ Discuss the solutions you have found to these

Mini-Symposium

- ▶ Present your projects to one another
- ▶ Discuss the difficulties you have come across
- ▶ Discuss the solutions you have found to these
- ▶ Identify what you need to finish the project

Model Specification

Attributes of a Good Econometric Model

▶ Theoretical Consistency

This is based on Lecture Notes from Jonathan Nagler, April 4, 1999, see also Gujarati, D. (2009) Basic Econometrics. 5th ed. McGraw-Hill Higher Education

Attributes of a Good Econometric Model

- ▶ **Theoretical Consistency**
- ▶ **Parsimony** – Explain a lot with a little

This is based on Lecture Notes from Jonathan Nagler, April 4, 1999, see also Gujarati, D. (2009) Basic Econometrics. 5th ed. McGraw-Hill Higher Education

Attributes of a Good Econometric Model

- ▶ **Theoretical Consistency**
- ▶ **Parsimony** – Explain a lot with a little
- ▶ **Goodness of Fit**

This is based on Lecture Notes from Jonathan Nagler, April 4, 1999, see also Gujarati, D. (2009) Basic Econometrics. 5th ed. McGraw-Hill Higher Education

Attributes of a Good Econometric Model

- ▶ **Theoretical Consistency**
- ▶ **Parsimony** – Explain a lot with a little
- ▶ **Goodness of Fit**
- ▶ **Identifiability** – For a set of data, unique values exist for the parameters

This is based on Lecture Notes from Jonathan Nagler, April 4, 1999, see also Gujarati, D. (2009) Basic Econometrics. 5th ed. McGraw-Hill Higher Education

Attributes of a Good Econometric Model

- ▶ **Theoretical Consistency**
- ▶ **Parsimony** – Explain a lot with a little
- ▶ **Goodness of Fit**
- ▶ **Identifiability** – For a set of data, unique values exist for the parameters
- ▶ **Predictive Power** – *Outside* the sample, the model is based on quantities observed *prior* to the time the prediction is needed

This is based on Lecture Notes from Jonathan Nagler, April 4, 1999, see also Gujarati, D. (2009) Basic Econometrics. 5th ed. McGraw-Hill Higher Education

Model Specification – Your Turn

- ▶ Which concepts do you employ?

Model Specification – Your Turn

- ▶ Which concepts do you employ?
- ▶ Can you split these up into separate theoretical entities?

Model Specification – Your Turn

- ▶ Which concepts do you employ?
- ▶ Can you split these up into separate theoretical entities?
 - ▶ E.g. social class can be split up into income, occupational status and educational background

Model Specification – Your Turn

- ▶ Which concepts do you employ?
- ▶ Can you split these up into separate theoretical entities?
 - ▶ E.g. social class can be split up into income, occupational status and educational background
 - ▶ How much do each of these sub-concepts contribute to explaining the variation in the dependent variable?

Model Specification – Your Turn

- ▶ Which concepts do you employ?
- ▶ Can you split these up into separate theoretical entities?
 - ▶ E.g. social class can be split up into income, occupational status and educational background
 - ▶ How much do each of these sub-concepts contribute to explaining the variation in the dependent variable?
- ▶ Do you have multiple, independent concepts?

Model Specification – Your Turn

- ▶ Which concepts do you employ?
- ▶ Can you split these up into separate theoretical entities?
 - ▶ E.g. social class can be split up into income, occupational status and educational background
 - ▶ How much do each of these sub-concepts contribute to explaining the variation in the dependent variable?
- ▶ Do you have multiple, independent concepts?
 - ▶ E.g. age, gender and ethnicity

Model Specification – Your Turn

- ▶ Which concepts do you employ?
- ▶ Can you split these up into separate theoretical entities?
 - ▶ E.g. social class can be split up into income, occupational status and educational background
 - ▶ How much do each of these sub-concepts contribute to explaining the variation in the dependent variable?
- ▶ Do you have multiple, independent concepts?
 - ▶ E.g. age, gender and ethnicity
 - ▶ Which one explains most of the variance in the dependent variable?