European Social Survey analysis

Bose Falk
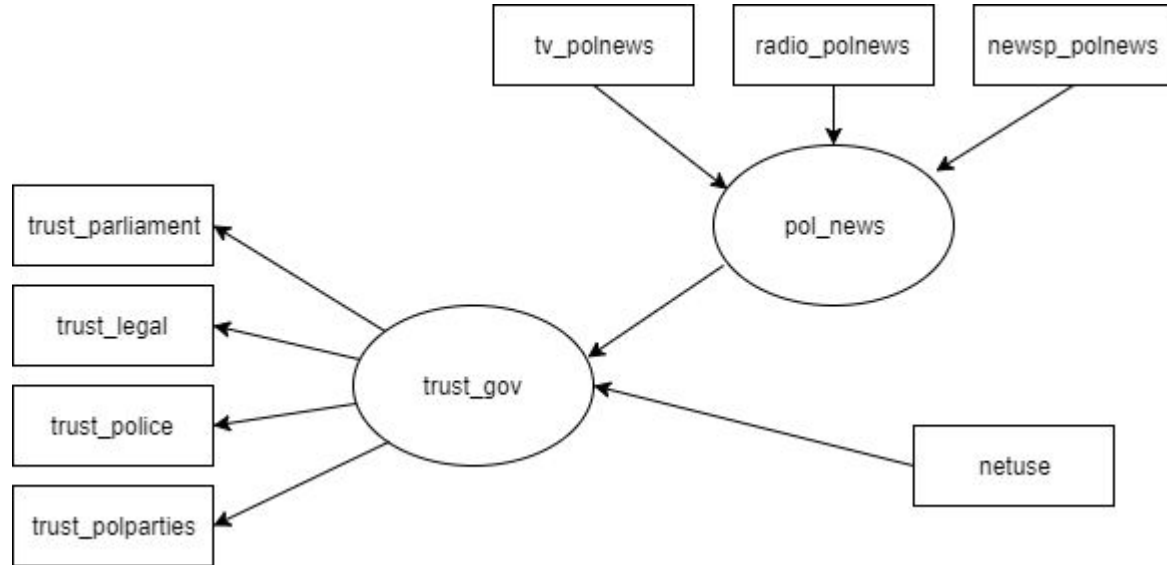
Question of interest

- "affect trust in government institutions?"
- Not directly asked, instead several questions in the same 'group' were asked
- Modelled using Structured Equations Modeling (SEM) method
  - Useful for latent, hidden variables
- Survey responses used to construct latent, hidden variable
  - 'Trust in government institutions' variable constructed from four survey questions:
    - How much you trust the parliament?
    - ... the legal system?
    - ... the police?
    - ... political parties?
- Mix of latent and observed variables used in regression model
  - Simultaneously solve this system of equations to estimate regression coefficients

Structured Equations Modeling

- Model-driven analysis
- Define connections between observed and latent variables, and optionally one or more linear regression models
- Solves system of equations to best fit the data, using covariance estimation
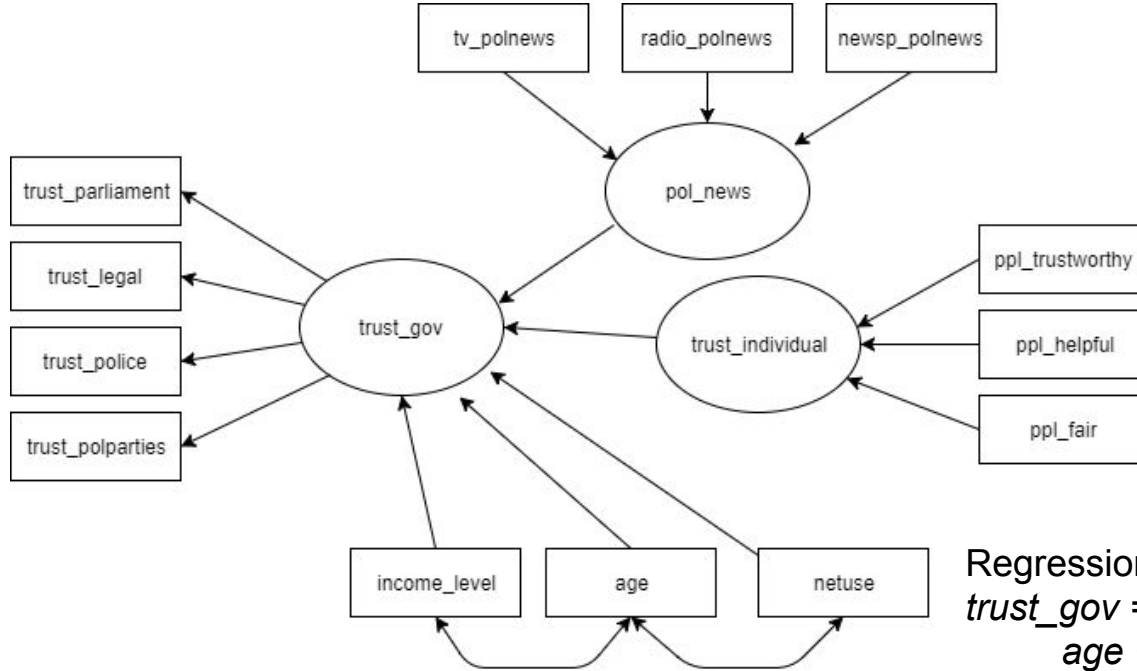- Diagnostics to investigate overall fit of the proposed model, and coefficients for regression model

Proposed model (simple)

Regression Model:
trust_gov = pol_news + netuse

Proposed Model (full)

Regression Model:
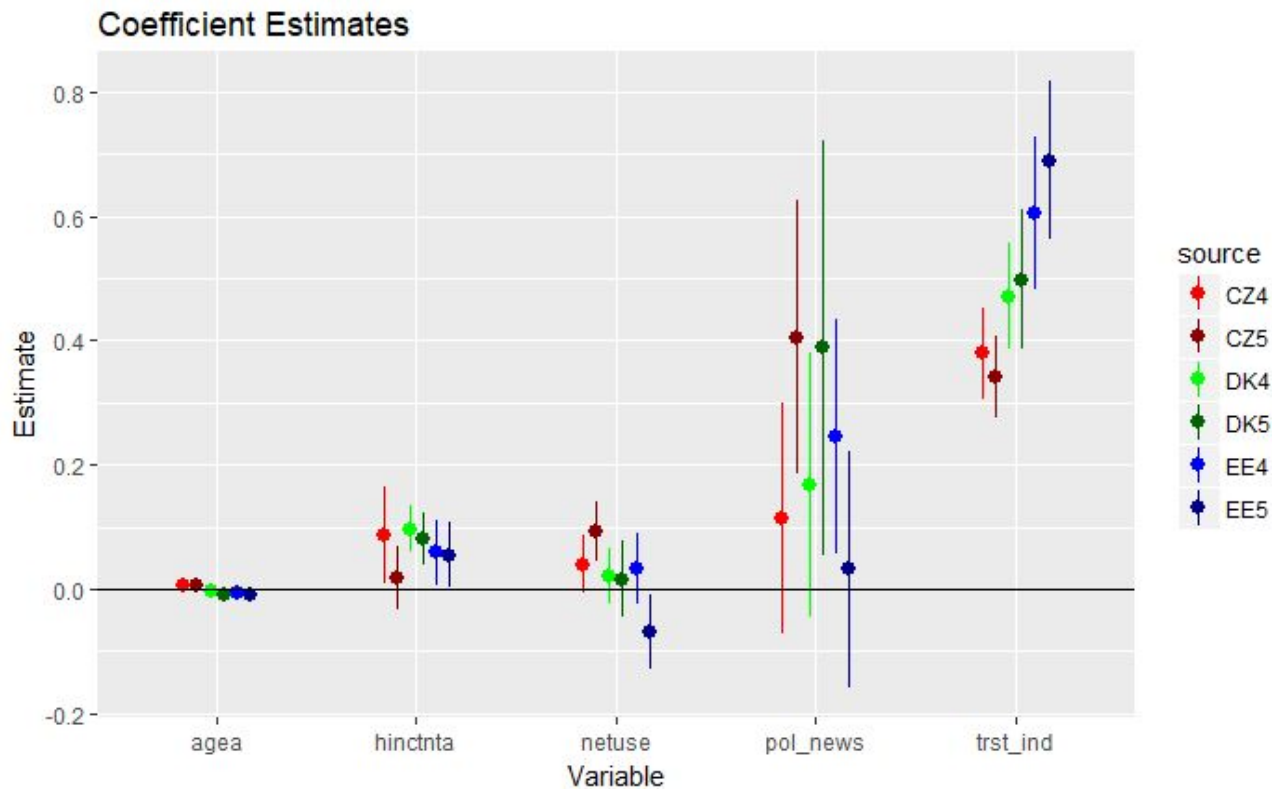*trust_gov = pol_news + netuse + trust_individual + age + income_level*

Age is correlated with netuse and income (but netuse and income are not correlated with each other)
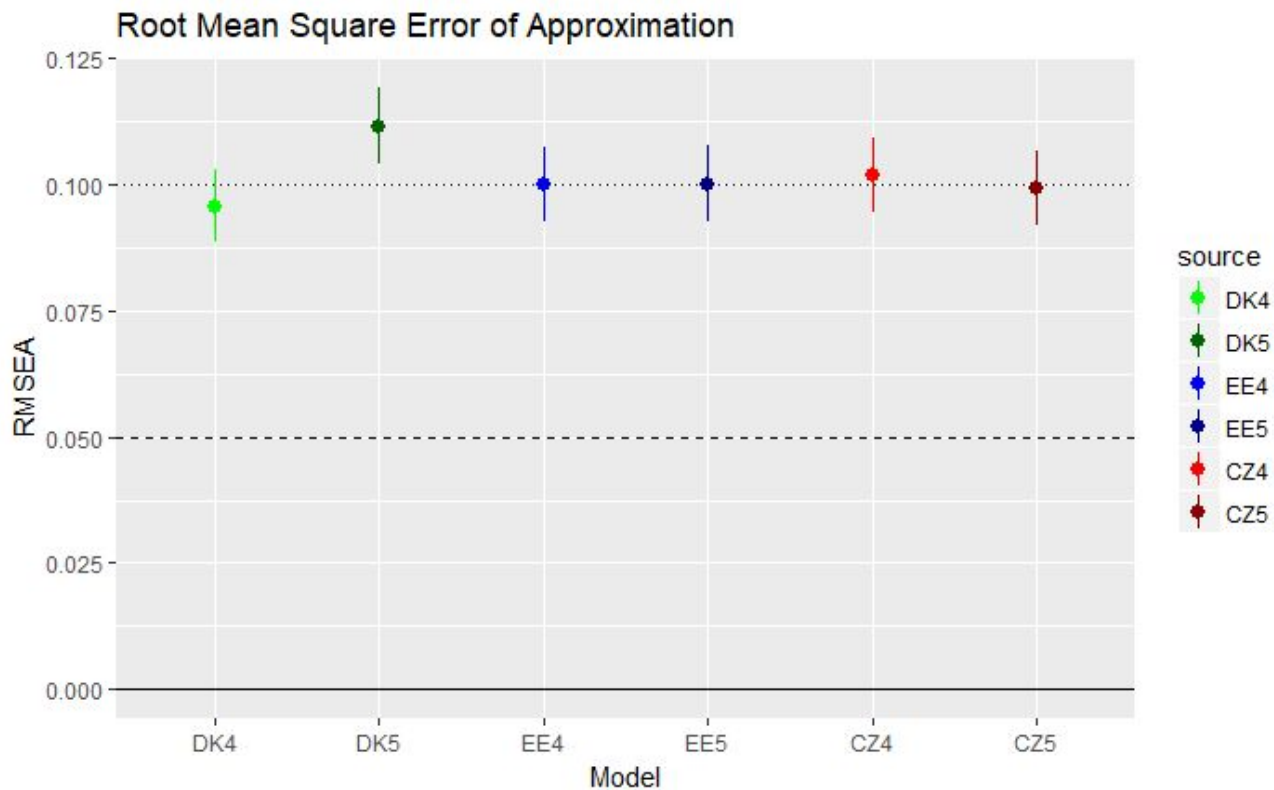
Analysis

- Fit model separately on each country & survey year
  - Three countries (Denmark, Estonia, Czech Republic)
  - Two survey years (round 4 & 5)
- Expect similar coefficients and p-values if model generally holds true
- Other slightly modified models tested, this had best model diagnostic scores & interpretability
  - Root Mean Square Error of Approximation (RMSEA)
  - AIC

Analysis - coefficients

Coefficient Estimates

Analysis - model fit

Root Mean Square Error of Approximation

Conclusion

- Appears to be same basic drivers of government trust across the three countries
- High trust in individuals and high income levels correlated with high trust in government
- Some evidence of higher political news consumption with high trust in government, but internet use had no effect
- This model has room for improvement

Other approaches

- Bayesian inference on same model
- Bin government trust responses into ordinal categories, and use decision-tree based model (Random Forest) with survey questions directly
- Instead of creating latent variables, use means of survey questions to create new summarized variable and use in regression
- Analyze over-time change in attitude (data allows tracking of individual respondent over time)