“Professional Social Science - Serving Research and Policy”

The Work Programme of COMPASS Research Centre

Session after lunch – KIWI: A Modelling Focus

Multiple data sets – Barry Milne
Determinants and disparities – Roy Lay-Yee
Creating synthetic data – Barry Milne
COMPASS Research: The Team – and KIWI

- 6 contract staff, usually 3–5 graduate students
- Big user of existing data: (i) analysis, (ii) modelling
- For our micro-simulation projects we draw on:
  - Two research fellows, two statisticians, a data manager/programmer

Knowledge-based Inquiry system With Intervention/policy modelling
COMPASS Research: The simulation models

1. Care systems – data from multiple sources
   - Primary care (family doctor) system
     - Models the role of the “family” doctor
   - Balance of care systems
     - Extends model to incorporate other care elements

2. Life course – data from longitudinal studies
   - Early life course (childhood)
     - Uses existing cohort studies for ages 0-13
   - Later years
     - Uses existing longitudinal studies for over 65s
Micro-simulation Modelling. Purpose

- Build a realistic computer-based model
  - For example, of early childhood

- Estimate the “drivers” of the model from real data
  - For example, an actual birth cohort study

- Create a synthetic data set that replicates the real one by applying those “drivers”.

- Assess policy options on the synthetic data by altering key parameters
Micro-simulation modelling. An example

- We started with data from a “real” birth cohort
  - Christchurch Health & Development Study, with 1265 children born 1977 in Christchurch, followed ever since

- We derived statistical rules to create a synthetic data set (a ‘virtual cohort’) through to age 13
  - A sample of children with typical biographies over the life-course, allowing for variation

- We then simulated what might happen if policy were to change, by altering parameters
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