Increasing Statistical Literacy Through Cooperation Between National Statistics Offices and Universities; a New Zealand Experience

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Outline

- Early developments 2006-2010
- Postgraduate course in Official Statistics 2011-2013
- Website
- Syllabus and assessment
- Lectures and videos
- Statistics New Zealand interest
- University reaction
- Student feedback
- Future
Early Developments 2006-2010

- Statistics New Zealand not an education provider
- Strategy: establish PARTNERSHIP with education providers to teach Official Statistics
- Network of Academics in Official Statistics (NAOS)
- Certificate in Official Statistics (for government employees, advisors not statisticians)
- Degree level postgraduate course proposed 2010
Postgraduate course – 2011 to 2013

- Negotiated between Statistics New Zealand and New Zealand Universities (NAOS)
- Aim is to give overview of Government Statistics
- Uneconomic for an individual university
- Video conferencing network linking universities
- Experts in key areas of Official Statistics teach from their institution
5 participating universities + national statistics office

1 institution teaching only

1 institution with students only (no teaching)

4 institutions with students and teaching
## Student numbers (2011 + 2012)

<table>
<thead>
<tr>
<th>University</th>
<th>Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>University of Otago</td>
<td>13</td>
</tr>
<tr>
<td>Victoria University</td>
<td>6</td>
</tr>
<tr>
<td>Statistics New Zealand</td>
<td>2</td>
</tr>
<tr>
<td>Auckland University</td>
<td>37</td>
</tr>
<tr>
<td>Canterbury University</td>
<td>1</td>
</tr>
<tr>
<td>Waikato University</td>
<td>3</td>
</tr>
<tr>
<td>Auckland University of Technology</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>62 students</strong></td>
</tr>
</tbody>
</table>
Website

• Home page for this year

http://msor.victoria.ac.nz/Courses/STOR481_2013T2/WebHome

• website requires no login identification
Links

The following links available freely

- Notices
- Syllabus and assessment *
- Course Key Dates
- Lectures and Videos *
- Assignments
- Handouts and Resources
- Open ID Access *
Syllabus and assessment

1. Overview, **underlying principles**, key case studies (observational, not experimental) advantages and limitations
2. **Demography** - fertility, mortality, migration and age structure analysis
3. **Demography** – population projections, policy implications, life tables, cohort control
4. Administrative, survey and census data – sample/population, measurement and **framework concepts**; case studies for variables, standards for collection, numerator/data matching

ASSIGNMENT 1

5. **Survey** design and analysis (cross-sectional, longitudinal, rotating panel), data cleaning, editing/imputation, post stratification, **survey weights**
6. **Health** statistics – age standardization, morbidity statistics, registers, data sets, data access, relative risks, odds ratios, other risks, confounding

ASSIGNMENT 2

7. Other **social statistics** – standardization, registers, data sets, data access, risks, odds, confounding
8. **Legal** framework and **ethical** framework – **relevant Acts** and process (**Confidentiality**, privacy, access)

ASSIGNMENT 3

9. **Data matching** - Record linkage
10. Data visualisation and GIS
11. Elementary **time series** and their use in economic and social statistics – CPI, PPI

ASSIGNMENT 4

12. **Macroeconomic Statistics** (Indices and National accounts – GDP)

ASSIGNMENT 5
Lectures

• 12 two hour lectures
• All students see power points, lecturer and students at other sites
• Students can ask questions
• Power points distributed before a lecture
• Videos recorded and available for future viewing
• Show a typical video

http://msor.victoria.ac.nz/Courses/STOR481_2013T2/WebHome
Statistics New Zealand Interest

- Young graduates aware of the Agency as an employer
- Contacts for potential vacation projects
- Comprehensive overview of Official Statistics
- Exposure to official statistics encountered in everyday life
- Interaction with universities
- Potential to introduce Official Statistics into education and the public arena
University Reactions

- Course credits developed at each university
- Several university qualifications possible
- Efficient teaching: no university able to teach this course on its own
- Expert available to teach each topic
- Across university cooperation
- Course coordinator at each university
- One overall controller
- Access to data sets for motivational examples
Student Feedback

- Positive feedback from students
- Course quality classified good to excellent
- Distance learning not an impediment to learning
- Lecture video resources well used
- Statistics New Zealand website rated highly
- Appreciated introduction to National data files
- Career opportunities identified
The future

- Universities continue with access to a course taught by experts
- Further students from social sciences, public policy and public health to be encouraged
- Potential as component of Data Science degree
- Large data sets provide motivational examples for teaching and projects
- More universities participating in 2013
- Otago Mathematics Teachers’ Association may fund a teacher to take the course and report back to schools
Thank you for listening

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