Does the power of diversity in governance apply to schools?
Professor Jacques Poot, Louis Wright, Dr Alison Day

Source: http://www.arahoe.school.nz
Growing Ethnic Diversity of Aotearoa New Zealand

Diversity Index

Race Based

Ethnic Fractions

“New Zealander” Added as Ethnic Group

Identity With Multiple Ethnicities
Motivation for this project

• Student populations are becoming more ethnically diverse

• Schools are run by Boards of Trustees
  – Up to 11 members: 3-7 elected parent reps, principal, staff member, co-opted trustees

• Can the “power of diversity” be detected in terms of school performance?

• Performance measure: national standards in mathematics, reading and writing

• Data: Ministry of Education, contributing primary schools (years 1-6), 2013

• Methodology: regression modelling
What does the literature suggest?

- Stahl et al. (2010) meta-analysis of the effects of cultural diversity in teams: inconclusive / hard to generalize
- Recent European research on diversity and innovation: inverse-U shaped relationship
- Howard (2010) – NZ case study: challenges and benefits associated with ethnicity-matched teacher assignment and increased teacher diversity
- Sheah (2014): spillover effect of students from educated immigrants can be +ve (Aus), -ve (Can), 0 (US)
- Braster and Dronkers (2014) Student ethnic diversity has a negative effect on student performance in rural & provincial areas, but a positive effect in large cities
How do we measure ethnic diversity?

Nijkamp and Poot (2015) *The economics of cultural diversity*:

- There are many different measures
- Each measure represents a different feature of the distribution
- We can also try to account for cultural “distance”
- Measures are sensitive to the level of disaggregation in the classification
Six key measures of diversity

- **SW**: Shannon-Weaver information (entropy) index
- **FR1**: importance of minorities
- **FR2**: diversity among minorities
- **FR**: fractionalisation index $FR = FR1 + FR2$
- **HO**: Hoover index
- **RQ**: Reynal-Querol polarization index
Ethnic diversity of New Zealand’s Boards of Trustees, 1997-2013
Comparison of ethnic composition

Student population by ethnicity

BoT members by ethnicity

Duncan & Duncan Dissimilarity index: used to compare evenness of distribution of two mutually exclusive groups within a greater population.
Analysis of national standards data

Hypotheses

1. Schools with diverse BoTs perform better than schools with homogeneous BoTs

2. BoTs that better reflect the ethnic composition of the student population are associated with stronger NS performance
Fraction of students at or above the national standard in 2013

Fraction of pupils at or above

Student ethnicity

Maori | Pasifika | Asian | European

Math | Reading | Writing

85%
Regressions

Most robust findings

• The higher the decile, the better the average NS performance

  However, decile sometimes significant as a quadratic function

  i.e: low and high decile schools perform better
Student performance in NS by decile

**Mathematics**

- Maori
- Pasifika
- Asian
- European

**Writing**

- Maori
- Pasifika
- Asian
- European
Regressions

Most robust findings

- Higher decile $\rightarrow$ better average performance in NS

  Decile sometimes significant as a quadratic function

  i.e: low and high decile schools perform better

- European students perform better in North Island schools

- Maori students perform better when diversity is high among minorities

- Students perform better in NS in smaller schools (except Maori)
Conclusions

- Increasing ethnic diversity of school students and BoTs
- The diversity experience varies widely across schools
- "Good fit" regression models differ between ethnic groups
- Small size of BoTs makes applying diversity measures difficult
- Results less informative among Pasifika and Asian ethnicities
Further research

• What is the impact of the school’s surrounding community and city/region?
• Controlling for the many unobserved school-specific effects with longitudinal panel data analysis
• Use much less coarse measures of diversity
• Accounting for “sorting” and “reverse causality”:
  – Parents’ school selection may be based on reported student NS performance.
  – This may be resolved by “instrumental variables”, such as predicting school ethnic composition by past national or regional migration trends.
Thank you! Whakawhetai ki a koutou! Xièxiè! Faafetai! Dank u!

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