# Can we rank universities based on principles of fairness and equity? And if so, should we?

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## Acknowledgements

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- Dan Edwards, Liang-Cheng Zhang & Julie McMillan (Australian Council for Educational Research)
- Paul Koshy (National Centre for Student Equity in Higher Education)

# The context:
# Higher Education in Australia

**38 major public universities, enrolling over 90% of all students**

**~ 1.5 million students, of which ~1.1. million Australian**
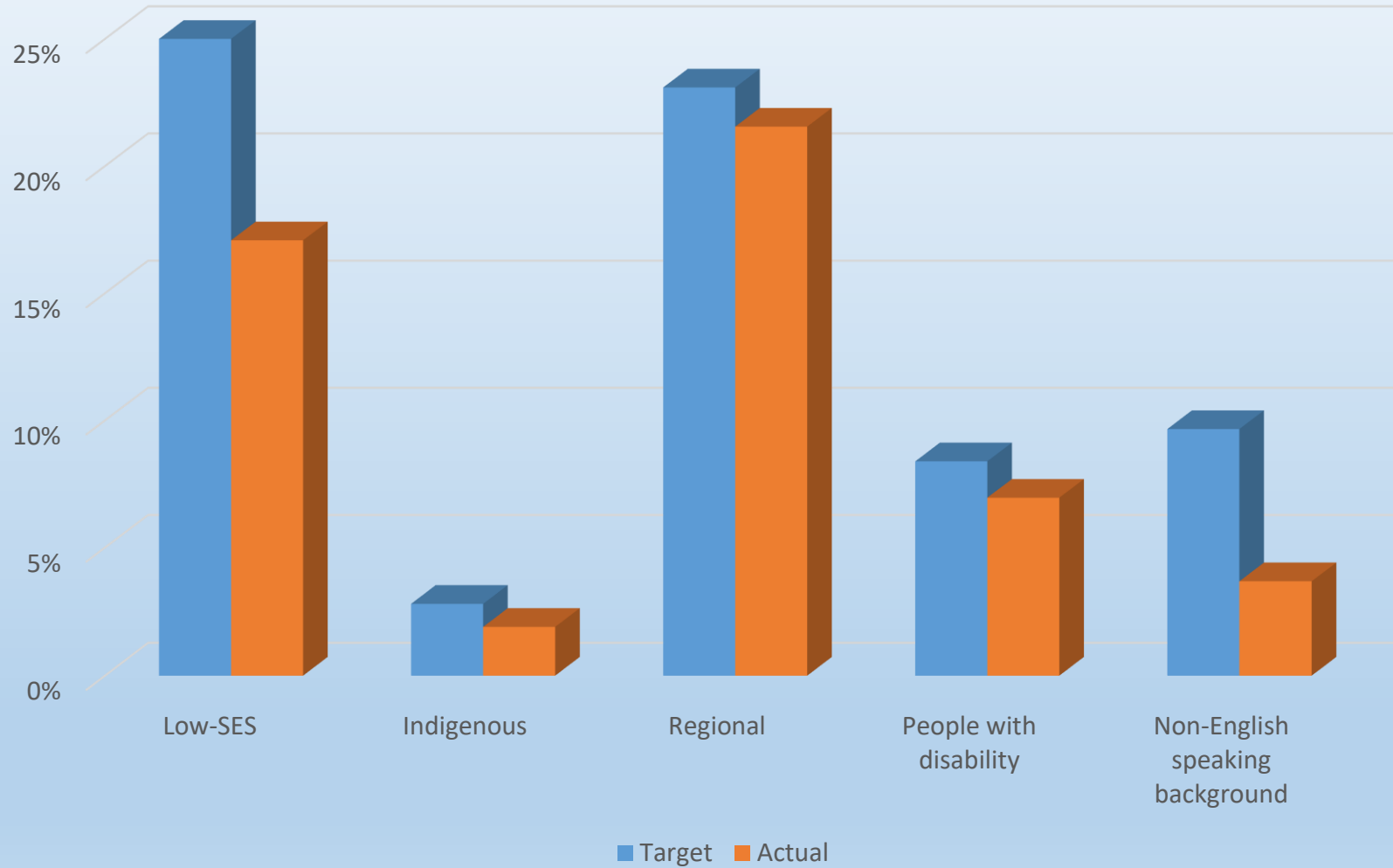
**Gender ratio: 55% Female, 45% Male**

**~ 70% study full-time**

**Around three-quarters (73%) studying at undergraduate level**

**Defined as a high-quality/high-equity system (in OECD terms) – BUT still not representative**

# Equity groups



Legend: Target (blue), Actual (orange)

Categories: Low-SES, Indigenous, Regional, People with disability, Non-English speaking background

- Funding to support disadvantaged students participate in higher education from 2010-2018 was $1.1 billion or $137.5 million per year.

- Projected budget for 2019-2023 is $704 million or $176 million per year (PC).

# The Project

1. Can equity (in higher education) be defined?

2. If so, can it be measured, using a rank?

3. If so, would this be useful?

# Defining higher education equity

| Existing ranking system | Indicators used to measure equity performance |
|---|---|
| Washington Monthly College Guide and Rankings | • Access rates<br>• Graduation Rates<br>• **Community service**<br>• **Research** |
| Social Mobility Index | • Cost<br>• Access rates<br>• Graduation rates<br>• Graduation Earnings<br>• **Endowment (privilege and how it is used)** |
| Good Universities Guide (Australia) | • Access Rates |
| U.S. News and World Report College Rankings | • Graduation Rates |
| STAKEHOLDER FEEDBACK | • Participation<br>• Retention<br>• Success<br>• Completion<br>• Graduate outcomes<br>• **Student satisfaction** |

# Domains

## (scope of institutional influence)

| Pre higher education | | During higher education | | | Post higher education |
|---|---|---|---|---|---|
| 1. Aspiration | 2. Academic Preparation | 3. Access & Participation | 4. First-year Experience | 5. Progression & Completion | 6. Graduate Outcomes |

# Measuring higher education equity

# Indicators
## (SMARV)

| Characteristics | Description |
|---|---|
| **Specific** | The indicator targets a specific area for improvement. |
| **Measurable** | The indicator uses robust, measurable data, available systematically |
| **Accountable** | The indicator measures something over which the institution has some degree of influence/responsibility. |
| **Relevant** | The indicator relates to an area of improvement is relative to equity |
| **Value** | What the indicator measures adds value to the final ranking system |

Scope of institutional influence

| Contexts | Pre-Higher Education | | During Higher Education | | Post-Higher Education | |
|---|---|---|---|---|---|---|
| **Domains** | Aspiration → | Academic Preparation → | Access & Participation → | First-year Experience → | Progress during Higher Education study indicators → | Graduate Outcomes |
| **Indicators** | (Aspiration: Data Source A) | (Ac. Prep: Data Source A) | Offer to study at higher education institute | First-year retention | Course success | Employment <12 months after graduation |
| | (Aspiration: Data Source B) | (Ac. Prep: Data Source B) | Acceptance to offer to study at higher education institution | First-year attrition | Course weighted average | Employment >3 years after graduation |
| | Developing aspirations to study higher education | (Ac. Prep: Data Source C) | Deferment of offer to study at higher education institution | First-year success | Degree completions | Earnings <12 months after graduation |
| | Application to study higher education | Non-traditional assessments of academic preparation | Enrolment in 'elite' degrees | First-year student survey (Source A) | Completed share of 'elite' degrees | Earnings >3 years after graduation |
| | | Alternative academic preparation | Provision of equity scholarships/other financial support | First-year student survey (Source B) | Time to completion | Further higher education studies |
| | | | Enrolment in higher education institution | | Student experience survey | Earning or learning <12 months of graduation |
| | | | | | | Earnings or learning >3 years after graduation |

DO - Measure what you value



DON'T – Value only what you can measure
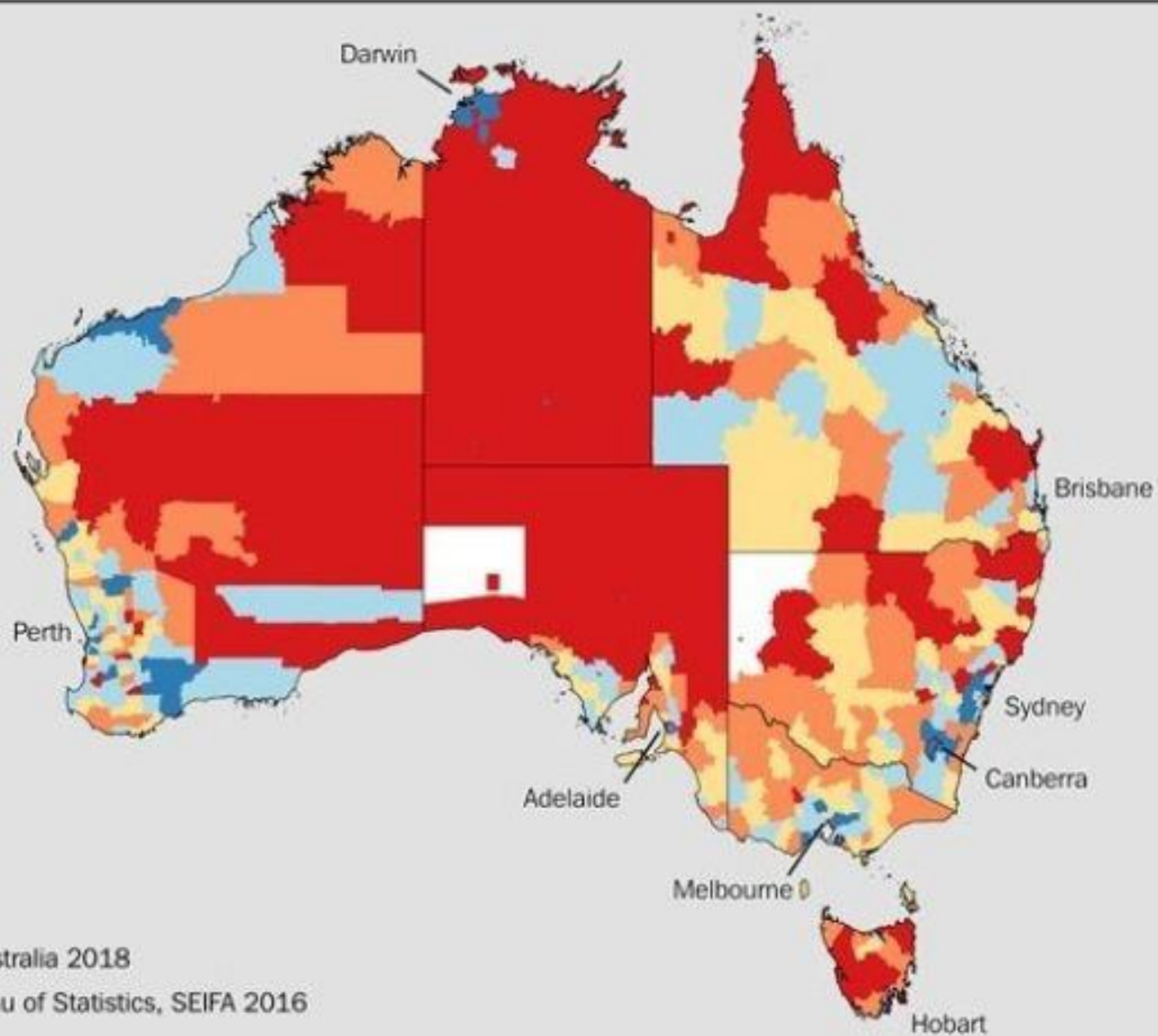
# Stage 3 – Measurements

IRSAD
Quintile

(most advantaged)

5
4
3
2
1

(most disadvantaged)

not published

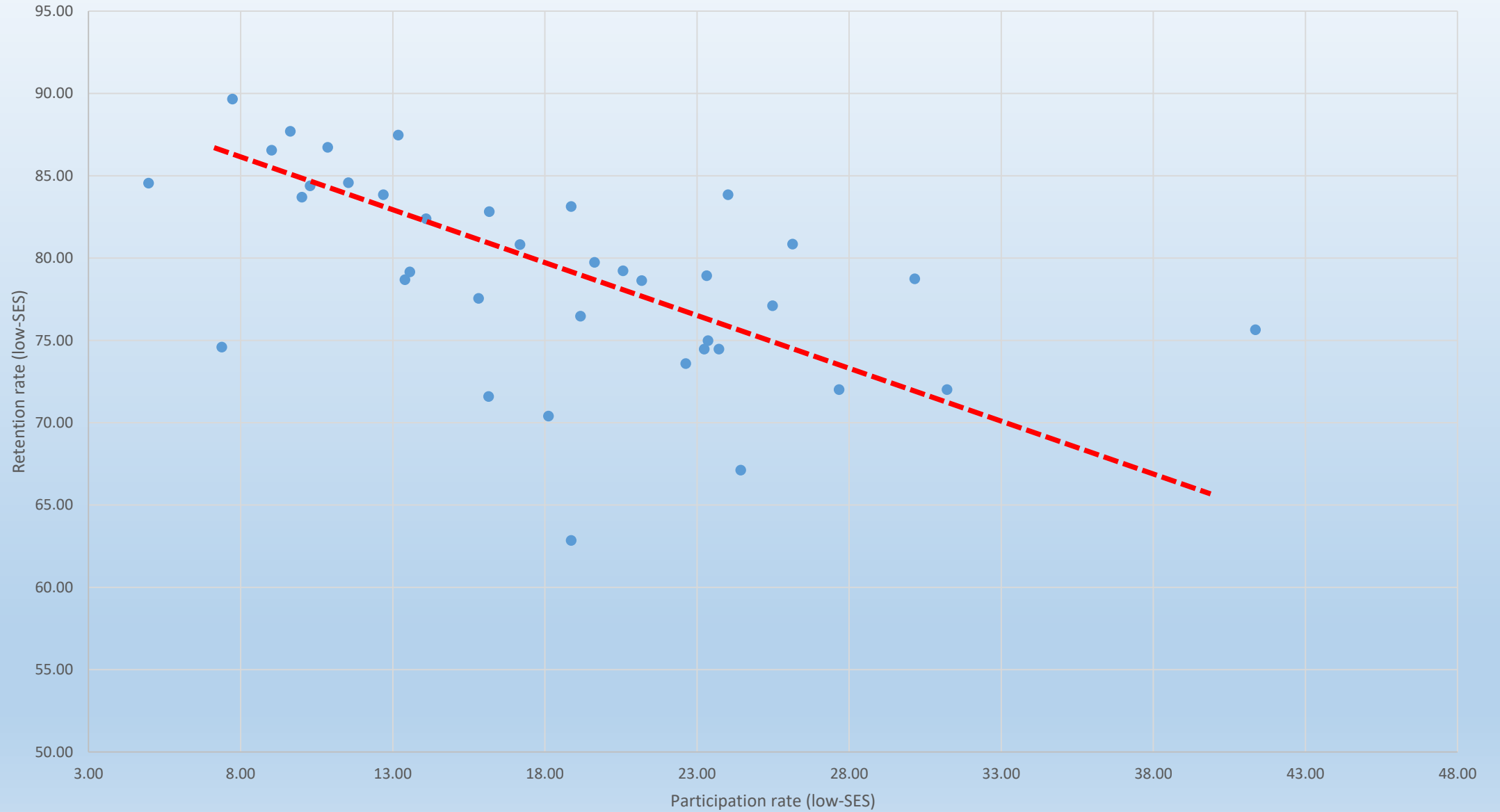© Commonwealth of Australia 2018

Source: Australian Bureau of Statistics, SEIFA 2016

Darwin
Brisbane
Perth
Sydney
Canberra
Adelaide
Melbourne 0
Hobart

The Trade-off between Participation and Retention

# To resolve…

FOR ACCESS – we measured both how an institution performed against both the national and state populations for the target group.

FOR ALL OTHER MEASURES – for each institution we asked:

"Are you supporting your disadvantaged students better or worse than other universities are supporting theirs?" and

"Are you supporting your disadvantaged students better or worse than you are supporting all your other students?"

# Building of rankings

- Rankings developed for each individual equity group
- Raw Performance Score – RPS (by measure, by uni)
- Normalised Performance Score – NPS (RPS normalised to scale 0-100)
- Weighted Performance Score – WPS (the NPS is multiplied by its allocated measure weight.)
- Overall Score (the WPS are summed)
- Ranking universities (universities are ranked according to overall score)
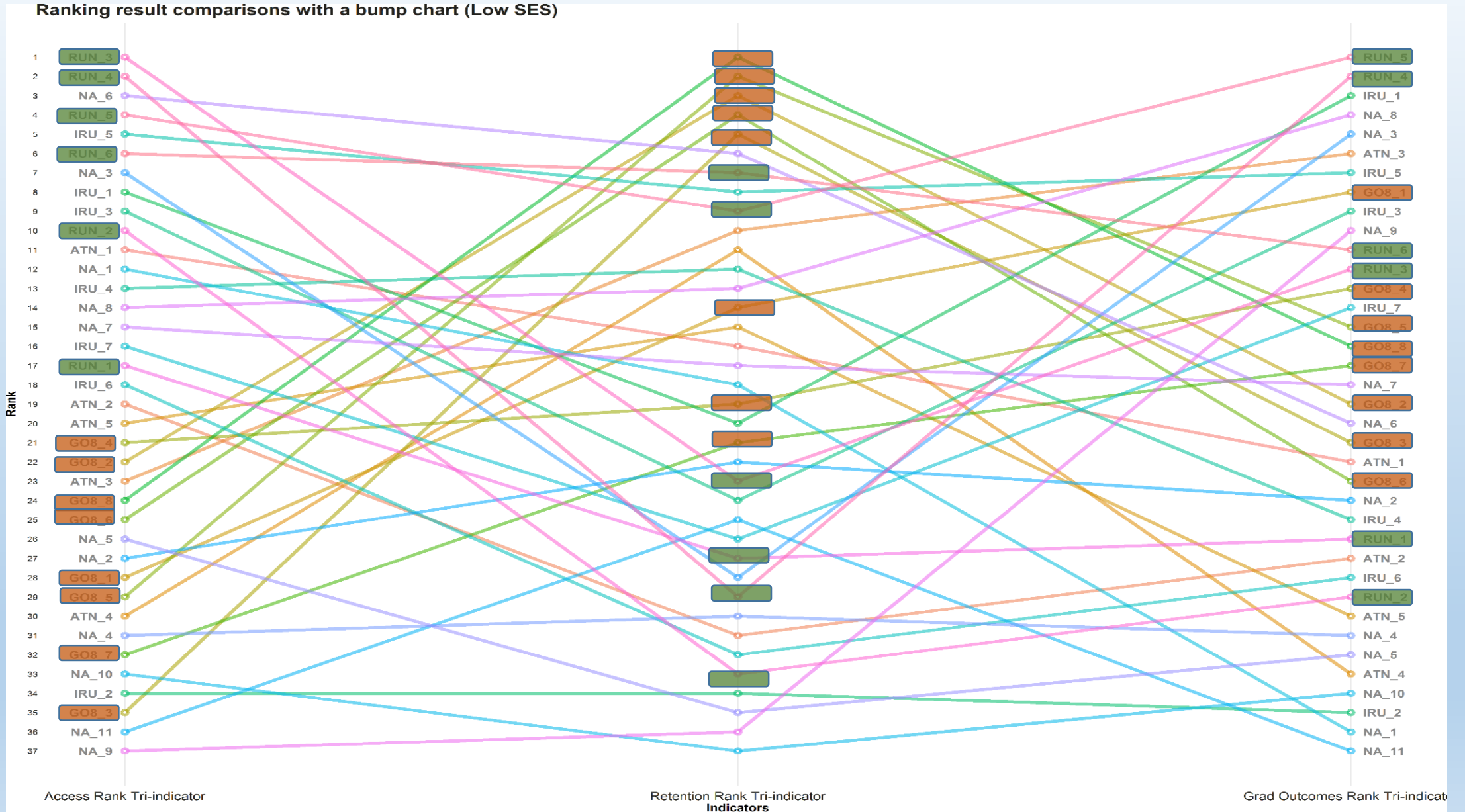
# Presentation of ranks
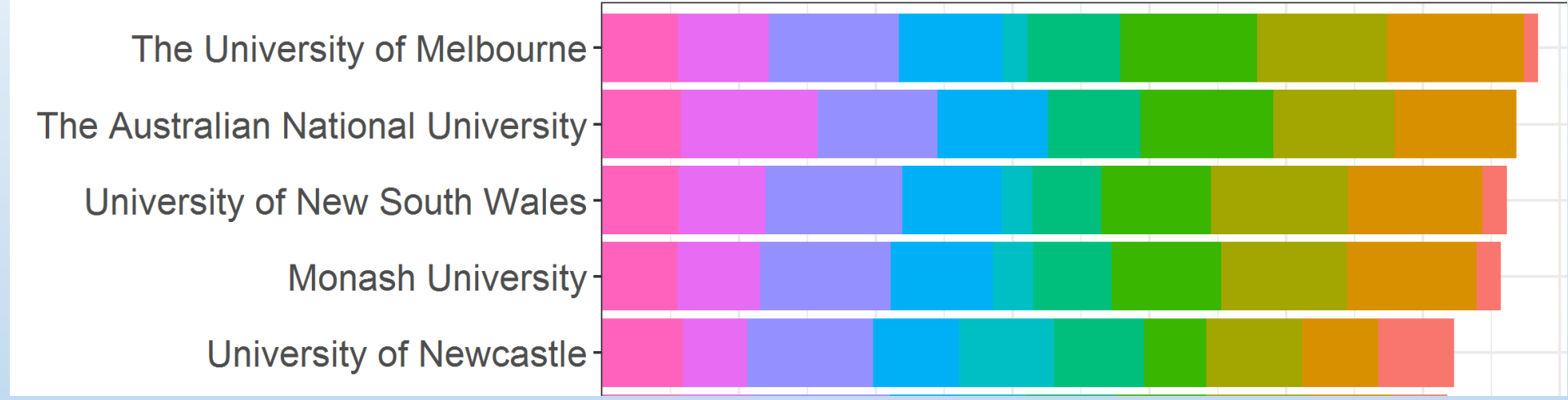
# Two ranks (just 2)

# Changing weights…tri-indicators with different weight emphasis [Low SES]



Ranking result comparisons with a bump chart (Low SES)

# 'National Comparison' vs 'Institution Relative'



Ranking result comparisons with a bump chart (Low_SES; NUP vs WIC)
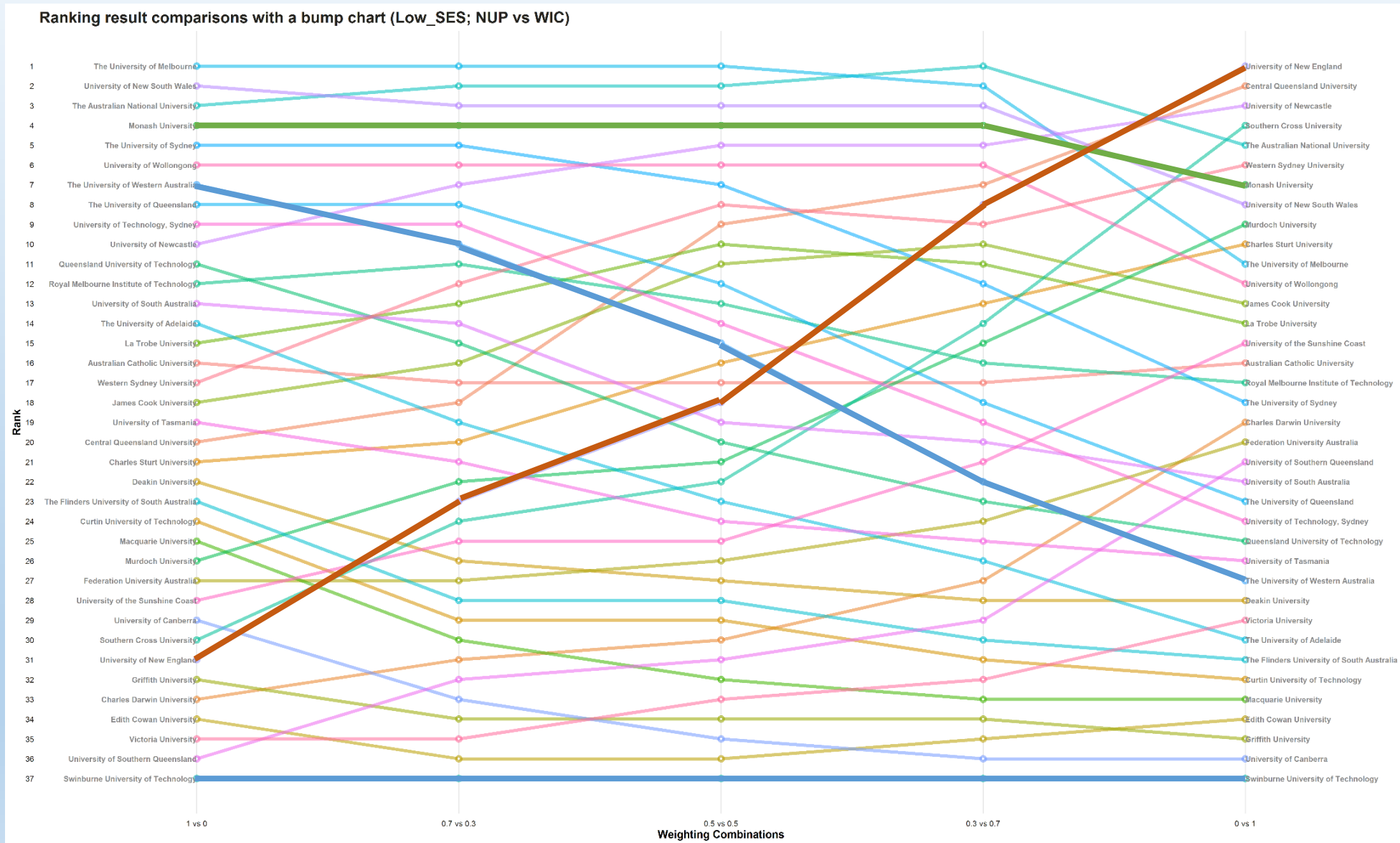
# Conclusions / Recommendations (internationalized)

1. It is *possible* to construct a higher education ranking system - but it may not be the optimal method; particularly in an environment where most/all institutions are underperforming.
2. Develop comprehensive indicators and only rank when all data are available. In particular:
    1. Always keep the aim of the rank in mind when choosing indicators
    2. Consider the importance of 'local' context or other external factors
    3. Use a systematic and rigorous means of assessing each indicator (beware redundancy!)
    4. The fewer indicators in a ranking the better.
3. Do not combine different target groups into one ranking.
4. Be transparent, especially in showing
    1. What logic underpins the methodology
    2. What the effect is of each of the constituent elements on the final rank
    3. The 'gaps' between each rank.

Measure what you value, don't merely value what you can measure.

# For further information on the project and its findings see:

Pitman, T., Edwards, D., Zhang, L.-C., Koshy, P., & McMillan, J. (2020). Constructing a ranking of higher education institutions based on equity: is it possible or desirable? *Higher Education*. doi:10.1007/s10734-019-00487-0