

# Students do behave strategically<sup>1</sup>.

## Grades under compensatory testing

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## Introduction

Different testing regimes exist for combining partial exam scores: Conjunctive (pass everything) versus Compensatory (pass on average). These rules make up **trade-offs** of false positives and negatives. Weaknesses in propagating compensatory rule: (i) Students not being treated equitably ([Close 2009](#)), (ii) Improper reasoning ([Smits, Kelderman, and Hoeksma 2015](#)), (iii) Improper methodology ([Dorresteijn, Kan, and Smits 2021](#)), (iv) valid studies show negative effects ([Yocarini et al. 2020](#)).

## Goals

1. Answer: ‘Is compensatory rule at POW *detrimental*?’
2. Recommendations for edu-managers and exam boards.
3. Usefulness of different statistical methods.

## Methods

*Data:* Exam data at item level in Bachelors POW. Compare: relations within and between exams of courses with different rules. *Methods:* Latent class/profile analysis ([Yocarini et al. 2020](#)), Mixture regression analysis ([Grün and Leisch 2008](#)), Model-based recursive partitioning ([mob, Zeileis, Hothorn, and Hornik 2008](#)). Resampling of item-level scores to mimic non-strategic reference scenario's.

## Results

Preliminary outcomes!

The first two blocks of Bachelor year 1 contain three courses of which two Introductory courses span both blocks and their partial exams are compensatory. The Methodology and Statistics 1 courses are stand alone courses.

Blok 1	Blok 2
Intro Educational Sciences 1	Intro Educational Sciences 2
Intro Pedagogical Sciences 1	Intro Pedagogical Sciences 2
Methodology	Statistics 1

Mob was applied to second Intro Pedagogical Sciences exam (IPS2) with the first Intro Pedagogical Sciences exam (IPS1) as predictor and Methodology (M) and first Intro Educational Sciences exam (ES1) as splitting variables:  
$$IPS2 = IPS1 | EPS1 + M$$

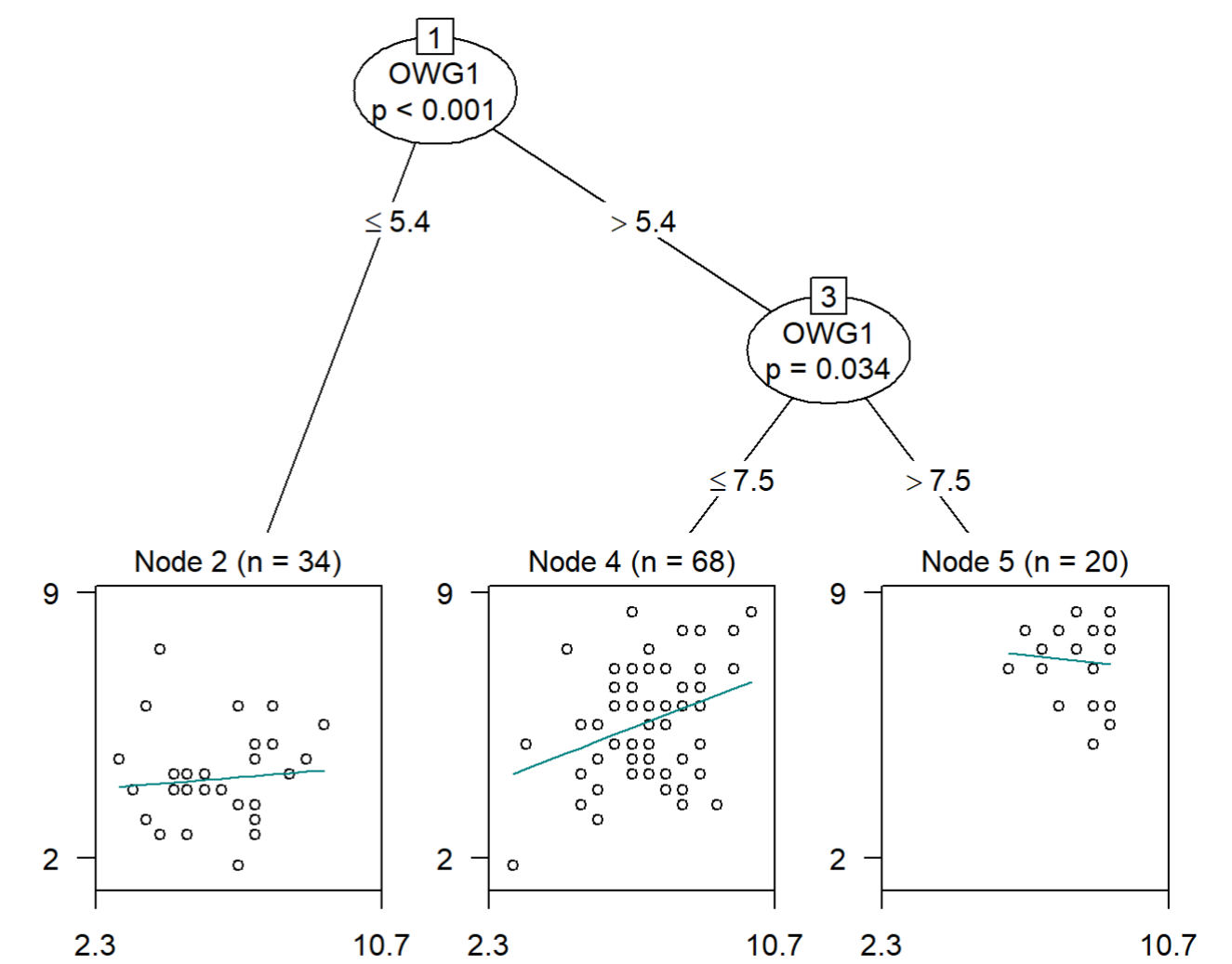


Figure 1: Plot of mob-analysis

Students for whom it was (not) beneficial to show strategic behavior in the IES course showed a different relation between the partial exams in the IPS course was found.

## Discussion

Preliminary conclusions!

- Strategic time allocation seems to take place.
- The current B1 setup may invite strategic behavior.

## References

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