

Empirical Software Engineering using Ultra Large Repositories

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Agenda

- Part 1 - Introduction
 - Course Overview Objectives
 - Student introduction and expectations
 - Syllabus and Project
- Part 2 - Example of an ESEULR study
- Part 3 - Intro to stats.

Typical ESE vs ESE in ULR



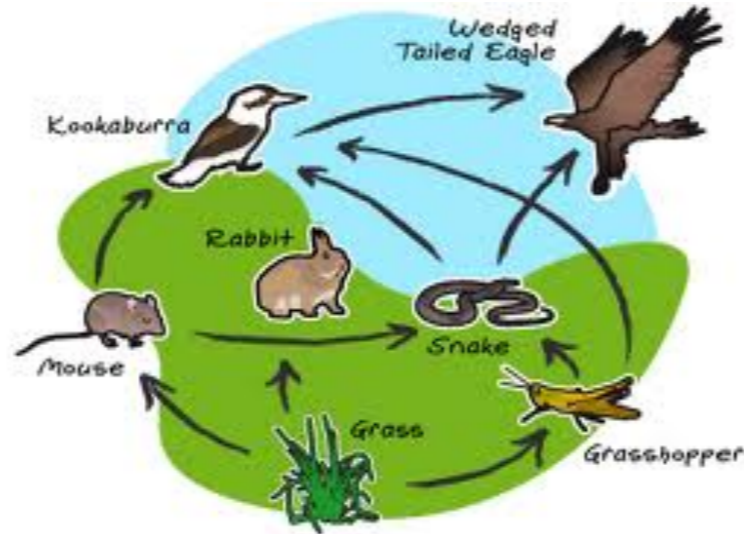
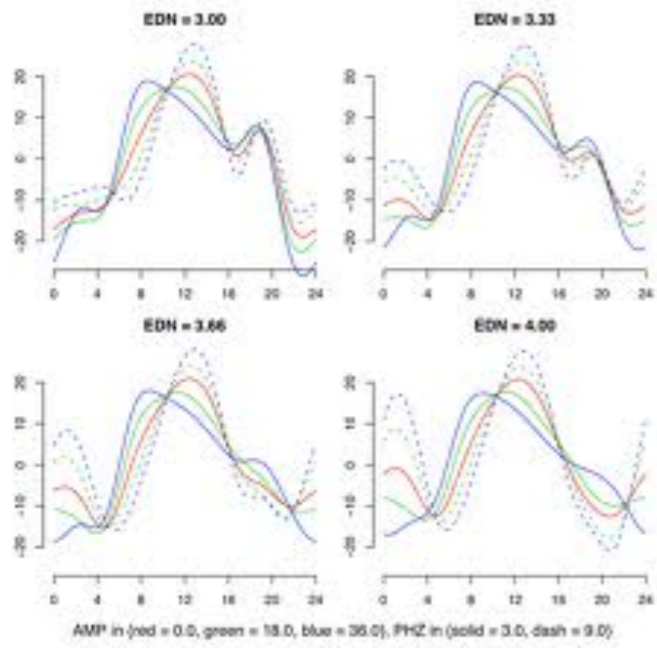
ANDROID



ANDROID



What can we learn about SE from these Ultra Large Repositories?

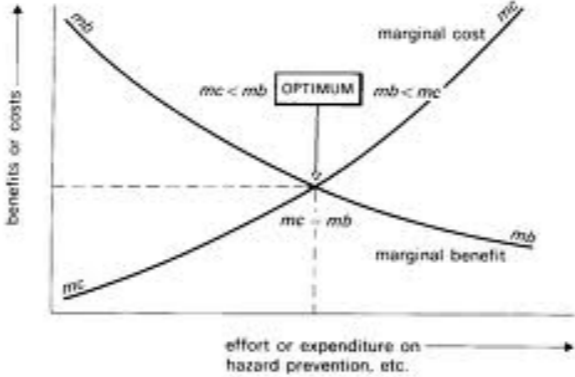


Challenges

Mining



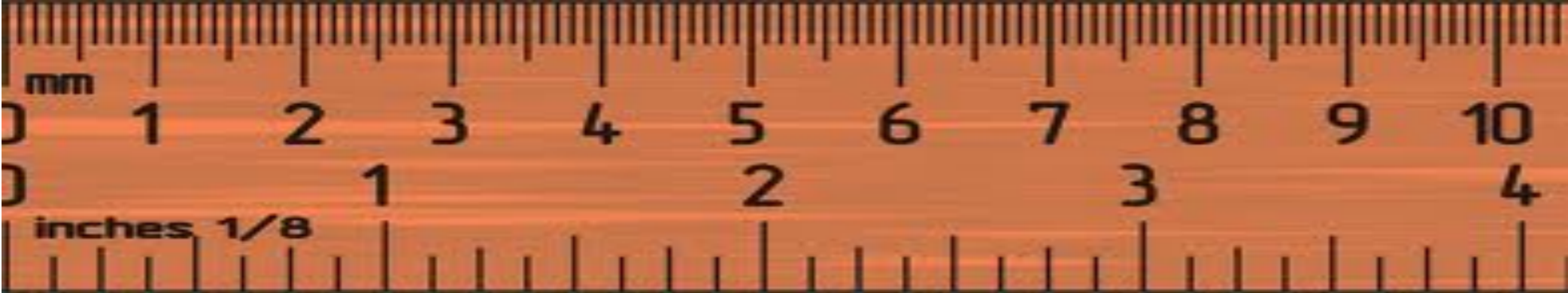
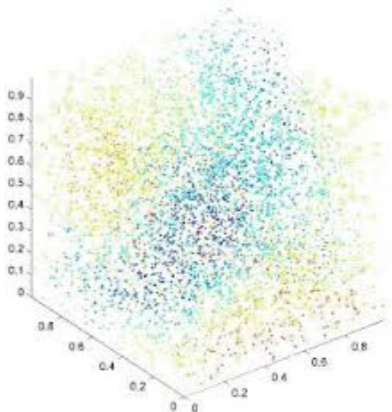
Sample Selection



Analysis



Noise



Part 2

Example Study

How do ratings evolve?



The image shows a 6x5 grid of stars. The top row consists of 5 grey stars. The second row has 1 gold star followed by 4 grey stars. The third row has 2 gold stars followed by 3 grey stars. The fourth row has 3 gold stars followed by 2 grey stars. The fifth row has 4 gold stars followed by 1 grey star. The bottom row consists of 5 gold stars. Overlaid on this grid is the text "How do ratings evolve?" in a large, bold, red, sans-serif font, slanted upwards from left to right.



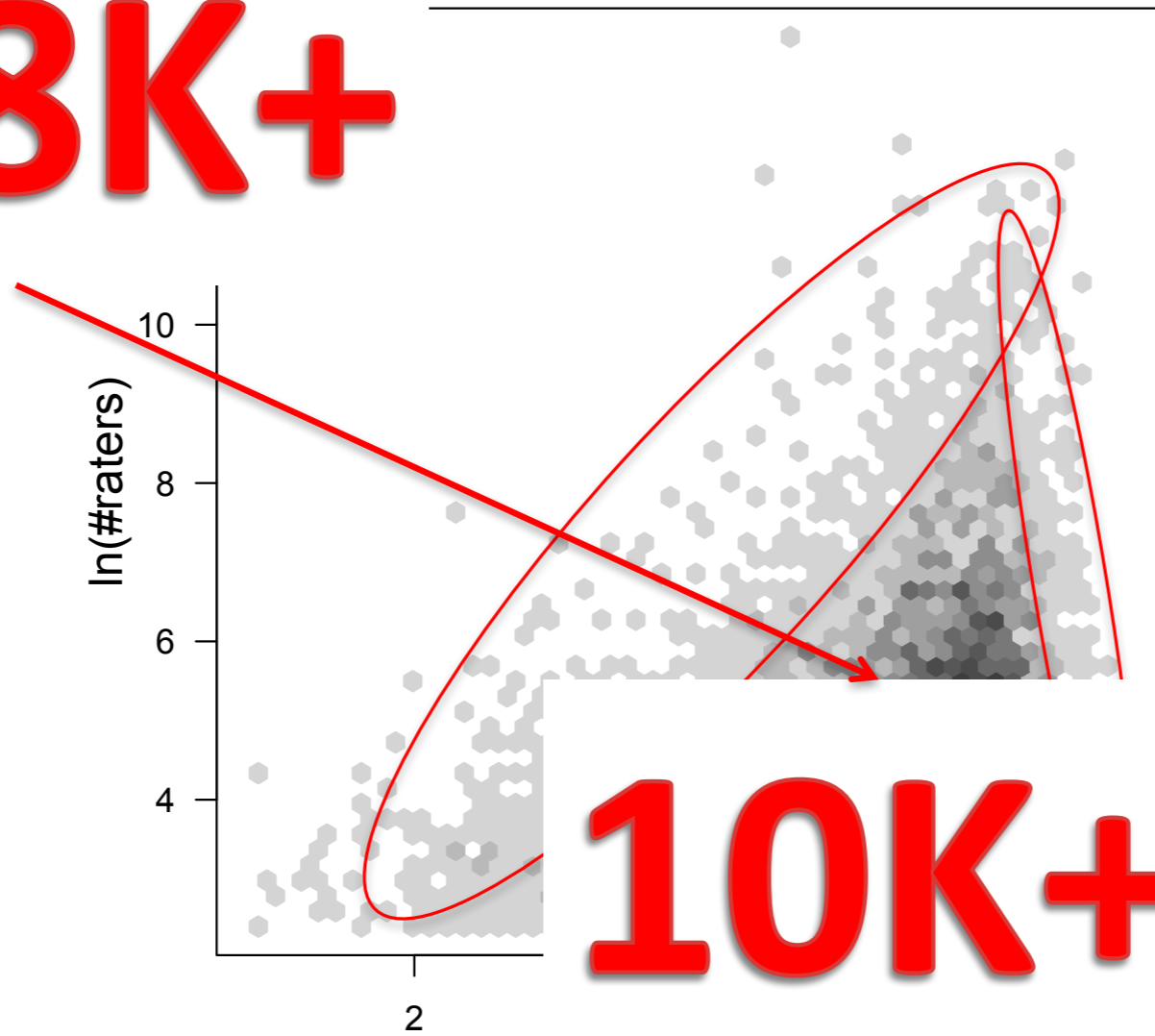
128K+

Are Most Apps *Great* ?



Lots of Apps with very few Ratings

128K+



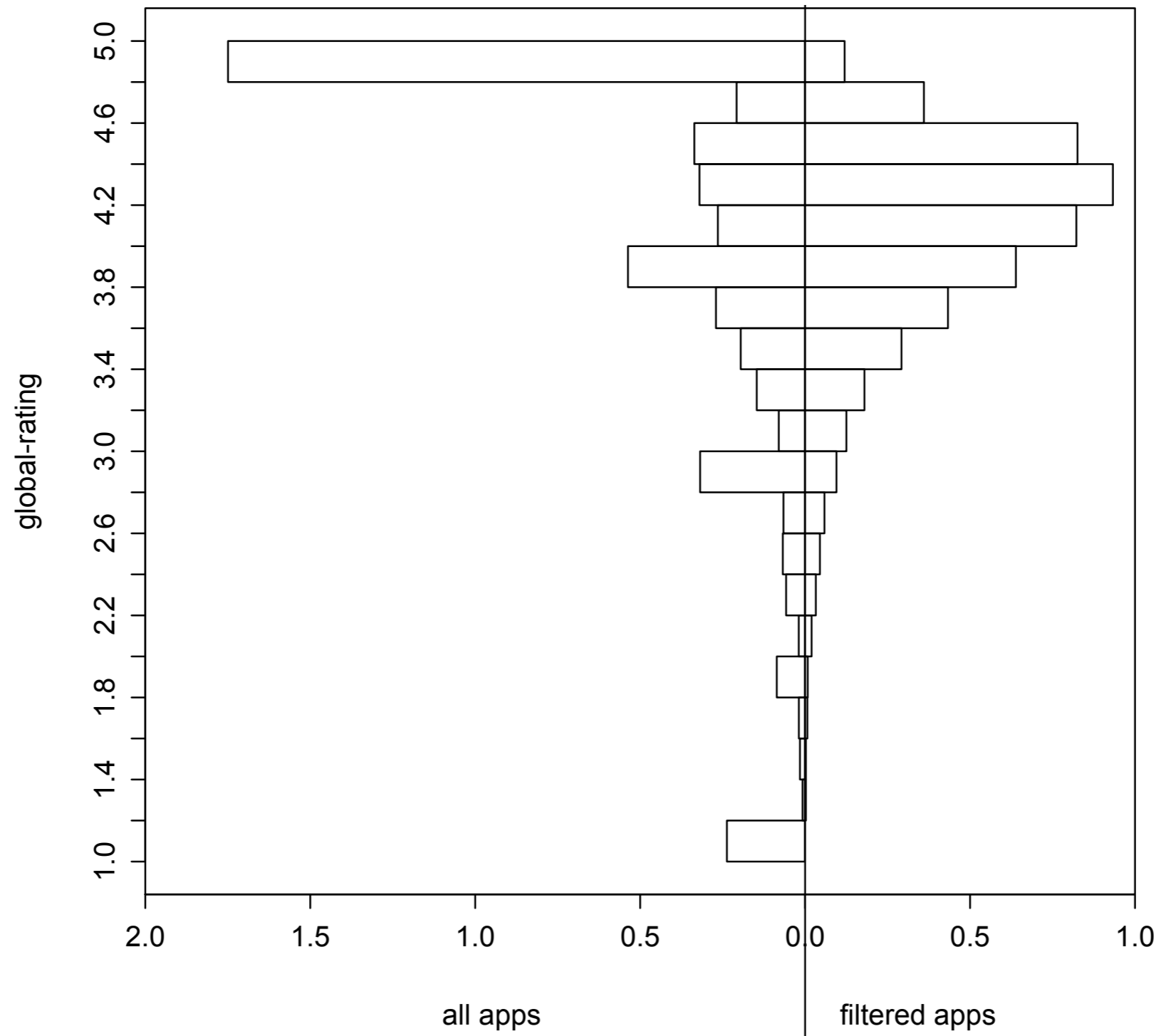
10K+

global-rating

Counts



Most apps are *Average*

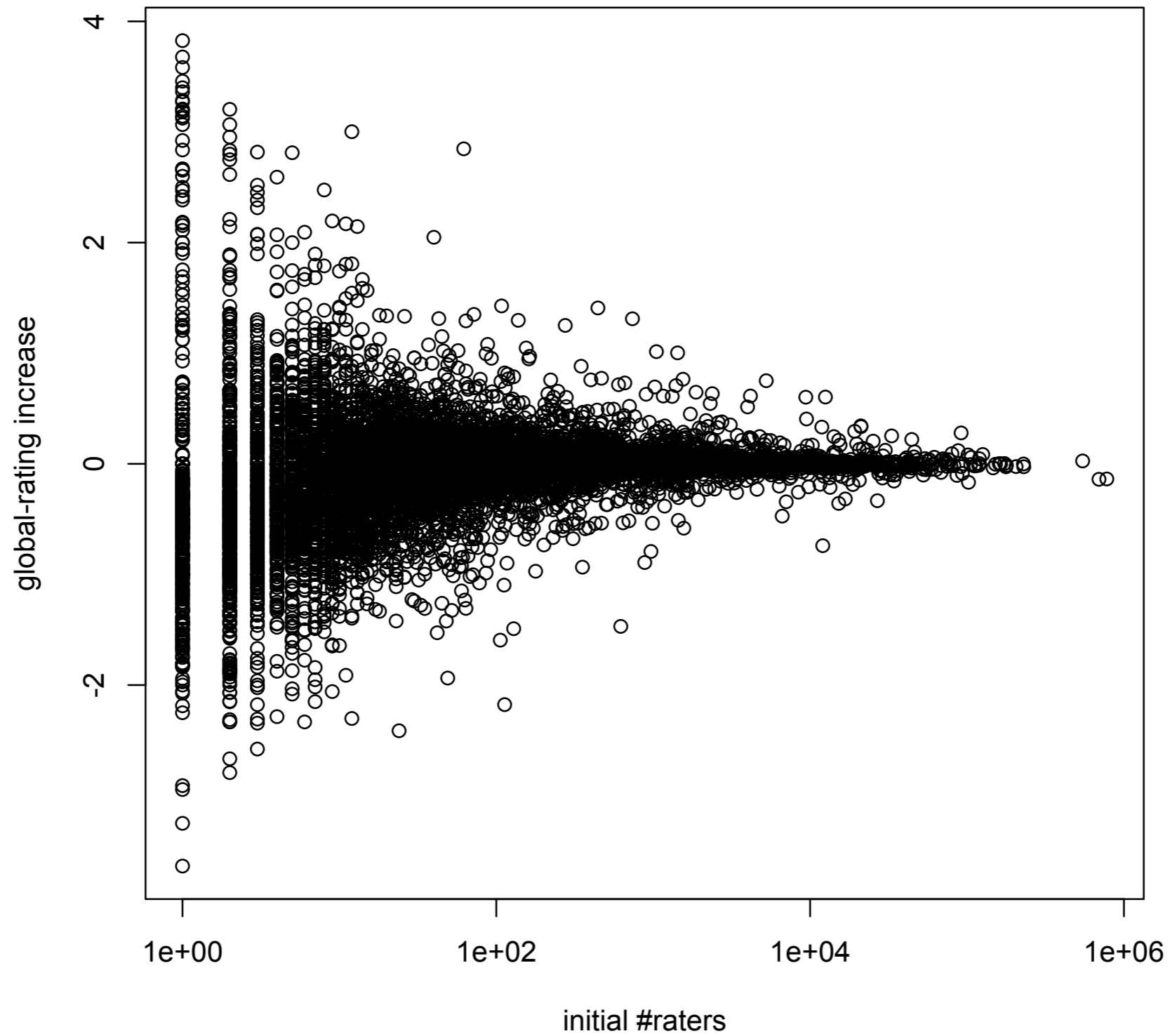


the

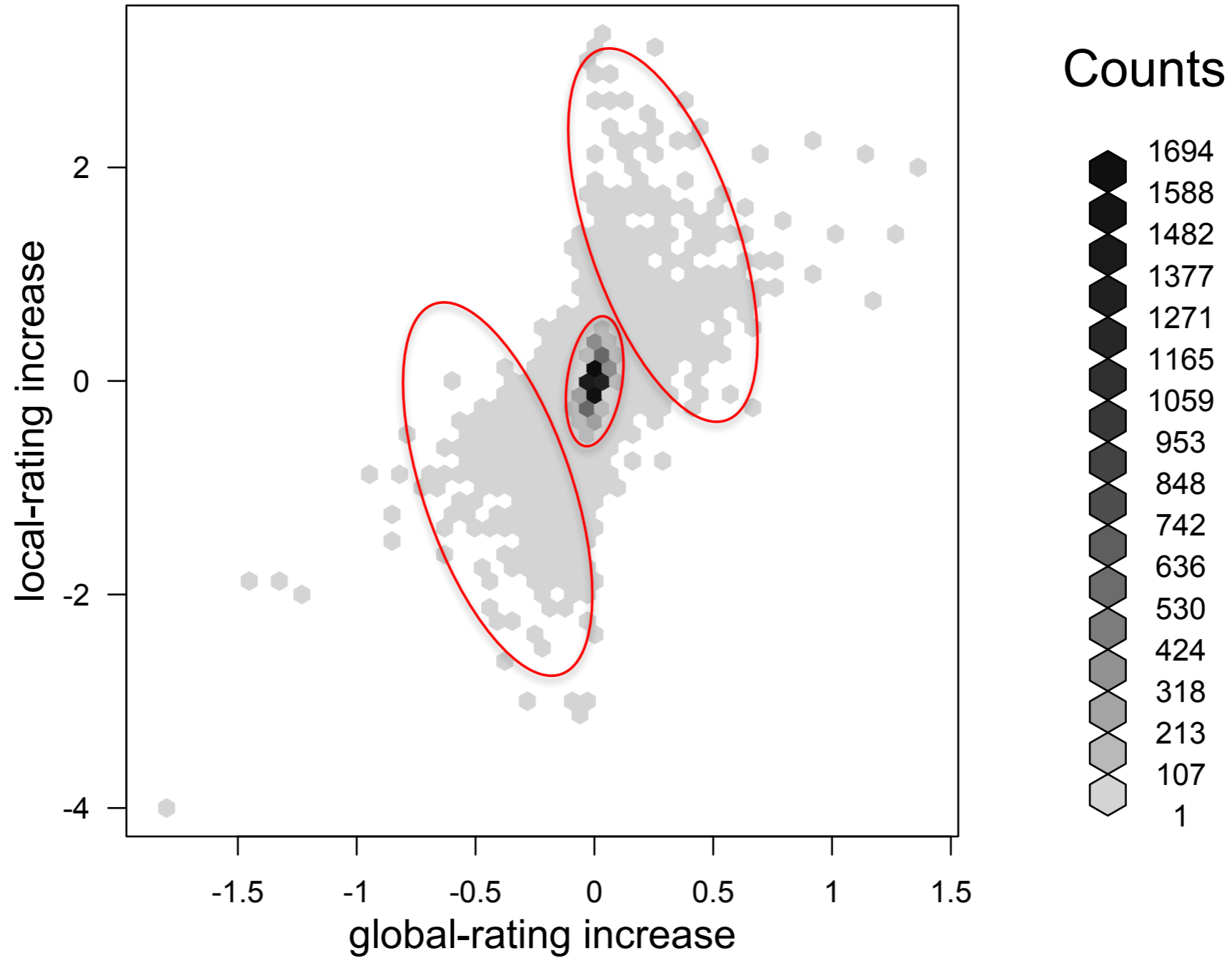
FALL

RISK

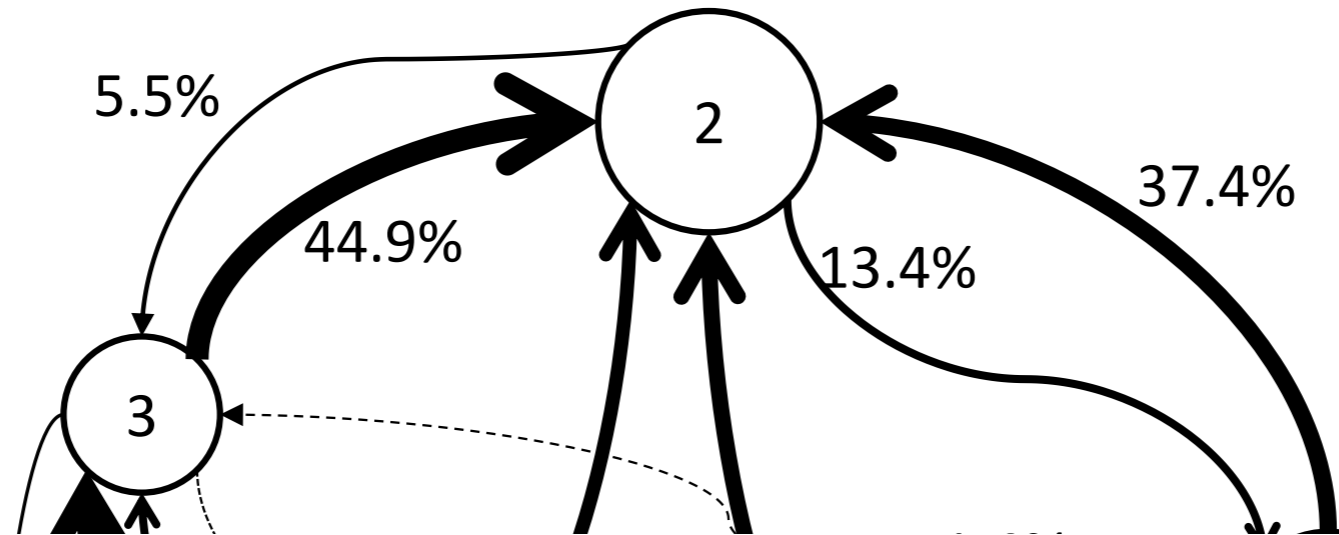
More Raters => Steady Ratings



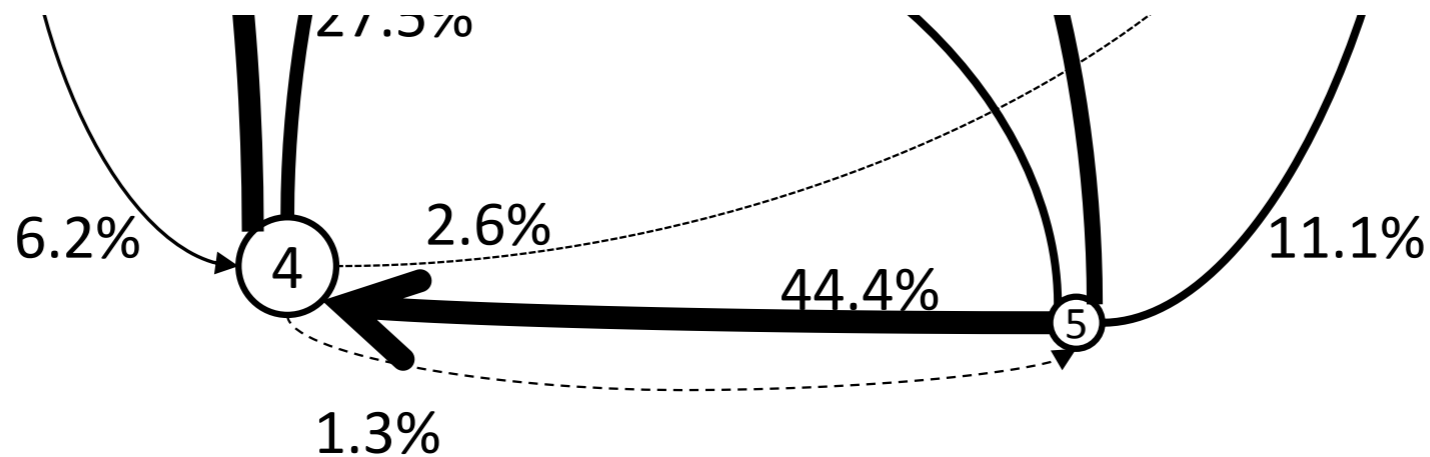
More Raters => Steady Ratings



Low Local Rating => Stable



**More than 1 star drop
=> Unrecoverable**



High Local Rating => Unstable

Part 3

Stats

- Mean/Median/Mode
- Histogram
- Correlation
- Hypothesis testing
- Regression