

CONCERNS REGARDING SPORT CLIMBING'S COMBINED COMPETITION FORMAT: WHO'S SUFFERING?

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OVERVIEW

- Sport climbing competition format
- Concerns regarding this format
- Data analysis
- Discussion

BACKGROUND

- Sport climbing made its debut at Tokyo 2020
- 3 disciplines: speed climbing, bouldering, lead climbing
- Only 1 set of medals for each gender at the Olympics
- Combined scoring system: multiplying 3 disciplines' ranks (best score = lowest score)
- 2 rounds: qualification (20 climbers), final (top 8 from qualification)

THE CONCERNS

- Climber interviews with Climbing Magazine in 2016:
- Lynn Hill

"I am NOT in support of the format that imposes that all climbers must compete in speed climbing. That is like asking a middle distance runner to compete in the sprint. Speed climbing is a sport within our sport."

- Mike Doyle

"Honestly, the people that will suffer the most are the ones that focus only on speed climbing. Those skills/abilities don't transfer as well to the other disciplines."

THE QUESTIONS

- What are the limitations of this "triathlon" format?
- Are the climbers' concerns valid?
- Is there a better format?

RANK CORRELATION

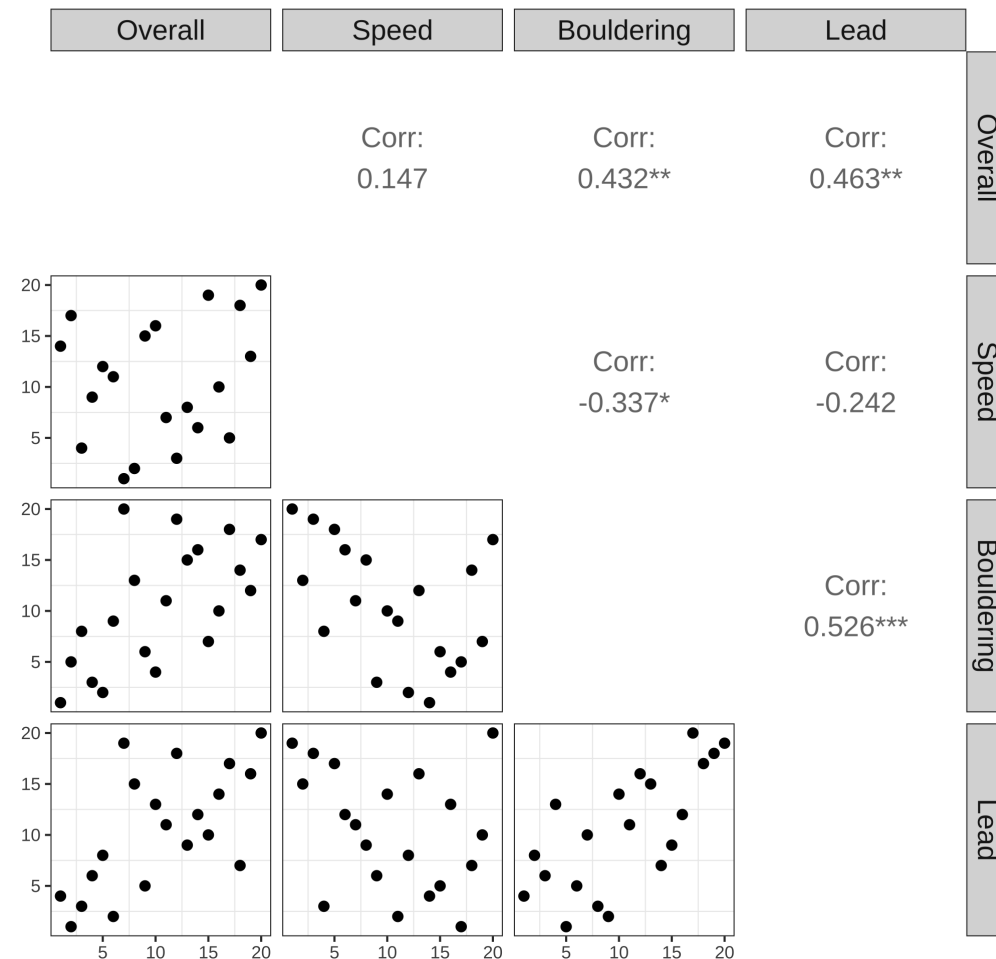
- Correlations between the overall rank and the ranks of the individual disciplines (speed, bouldering, and lead)
- Use Kendall's τ , a nonparametric measure of ordinal association.
- Data: Tokyo 2020 Women's Qualification

climber	overall	speed	bouldering	lead
Janja Garnbret	1	14	1	4
Seo Chae-hyun	2	17	5	1
Miho Nonaka	3	4	8	3
Akiyo Noguchi	4	9	3	6
Brooke Raboutou	5	12	2	8

RANK CORRELATION (CONT'D)

- **Lead** and **bouldering** ranks are more highly correlated with **overall** rank than **speed**.
- Positive association between **lead** and **bouldering** ranks.
- Negative relationships between both **lead** and **bouldering** ranks with **speed**.

Scatterplot and Correlation Matrix for Women's Qualification at Tokyo 2020



PRINCIPAL COMPONENT ANALYSIS

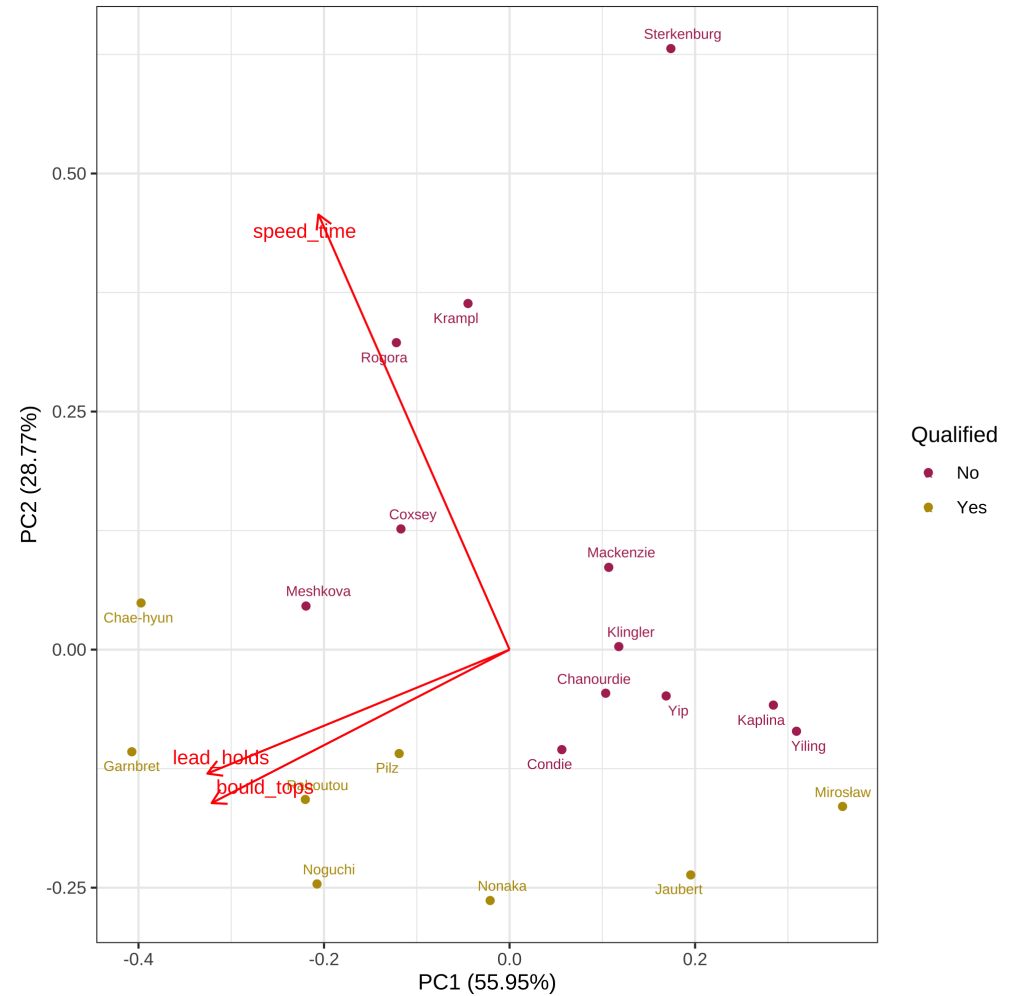
- Find underlying correlations that exist among the climbing disciplines
 - Speed climbing time
 - Bouldering tops
 - Lead holds

- Data: Tokyo 2020 Women's Qualification

climber	speed_time	bould_tops	lead_holds
Janja Garnbret	9.44	4	30.0
Seo Chae-hyun	10.01	2	40.5
Miho Nonaka	7.55	1	30.5
Akiyo Noguchi	8.23	3	27.5
Brooke Raboutou	8.67	3	26.5
Jessica Pilz	8.51	1	33.5
Aleksandra Mirosław	6.97	0	12.0

PCA RESULTS

- PC1: lead and bouldering
 - Positively correlated
- PC2: only speed



DISCUSSION

- The climbers were right...
- The idea of a climbing triathlon gives speed climbers a huge disadvantage.
- Suggestion: 1 set of medals for speed and 1 set of medals for bouldering and lead.
- It is confirmed that at Paris 2024, there will be 2 competitions:
 - Lead and bouldering, combined
 - Speed-only event

CHEERS!

- GitHub repo

 github.com/qntkhvn/climbing

- Check out my series of sport climbing blog posts

 qntkhvn.netlify.app/blog

Slides created via the R package [xaringan](#).

APPENDIX

- Data source:
https://en.wikipedia.org/wiki/Sport_climbing_at_the_2020_Summer_Olympics_-_Women's_combined
- Climbing magazine interviews: <https://www.climbing.com/news/olympic-climbing-survey-15-pro-climbers-weigh-in>
- Speed climbing
- Bouldering and lead climbing