

Development of a Bayesian Thurstonian Model for Analysing Ranking Data From Live Postdoc Recruitment

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R4RI Narrative CV Template

Personal statement
Personal details
Module 1 Contributions to the generation of new ideas, tools, methodologies or knowledge
Module 2 The development of others and maintenance of effective working relationships
Module 3 Contributions to the wider research and innovation community
Module 4 Contributions to broader research/innovation-users and audiences and towards wider societal benefit
Additions

Allocation of funding

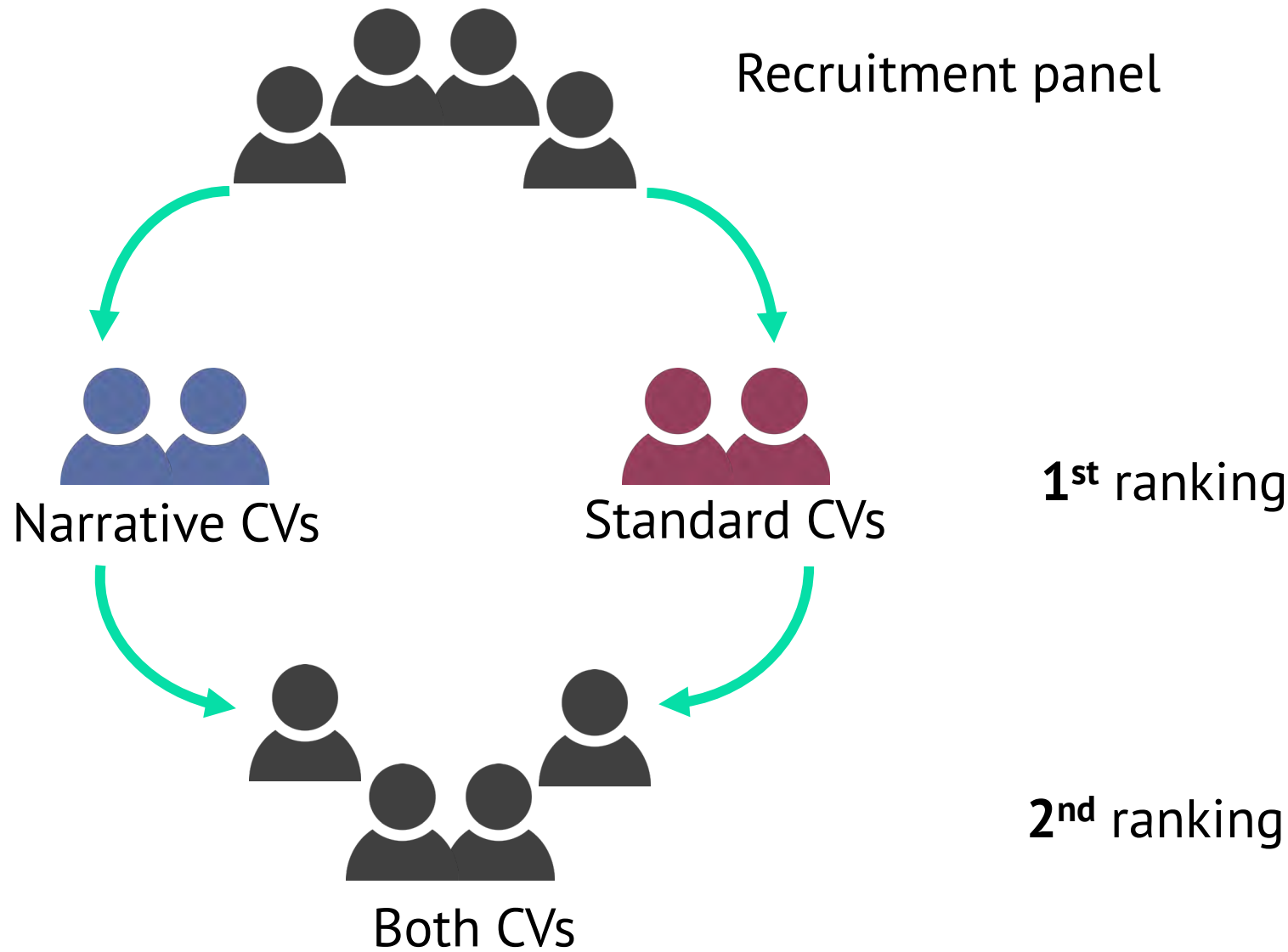


Recruitment

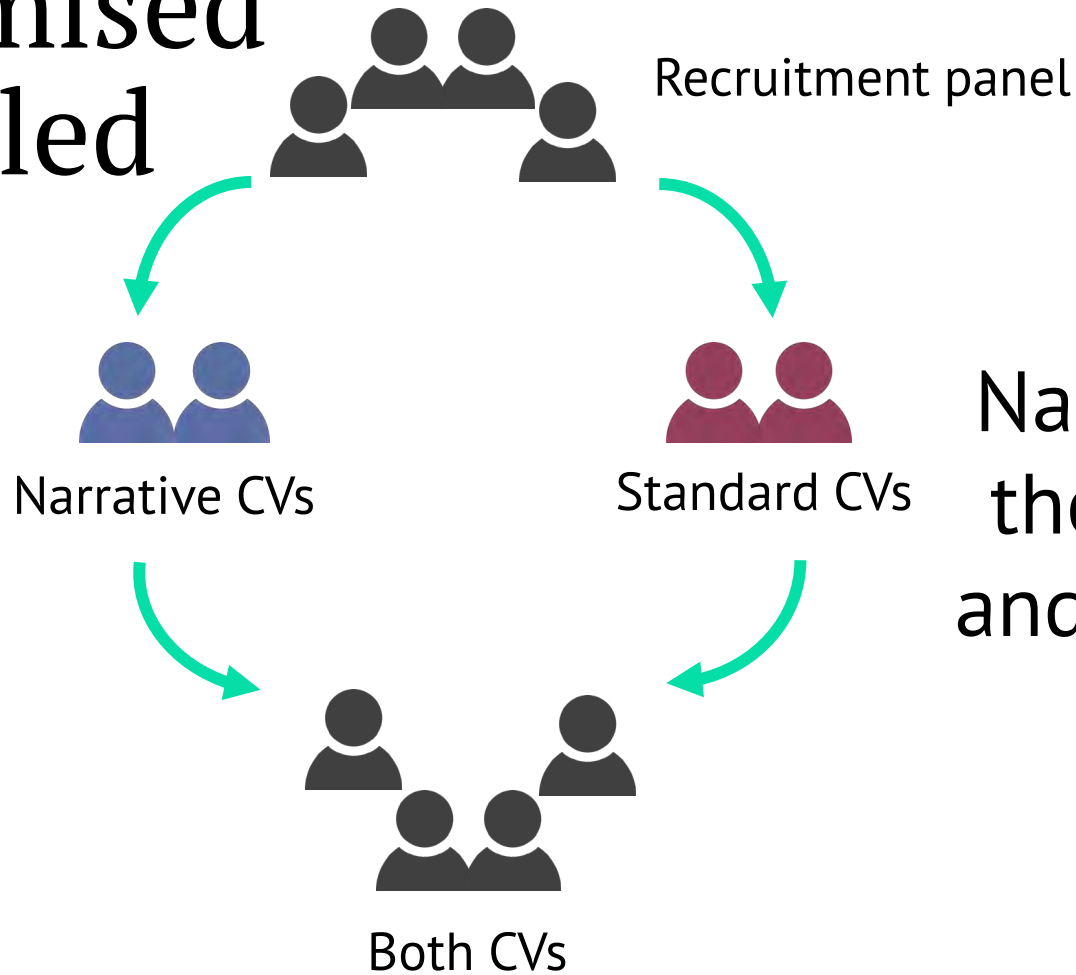


Randomised controlled trial

Conference paper
available on [Zenodo](#)

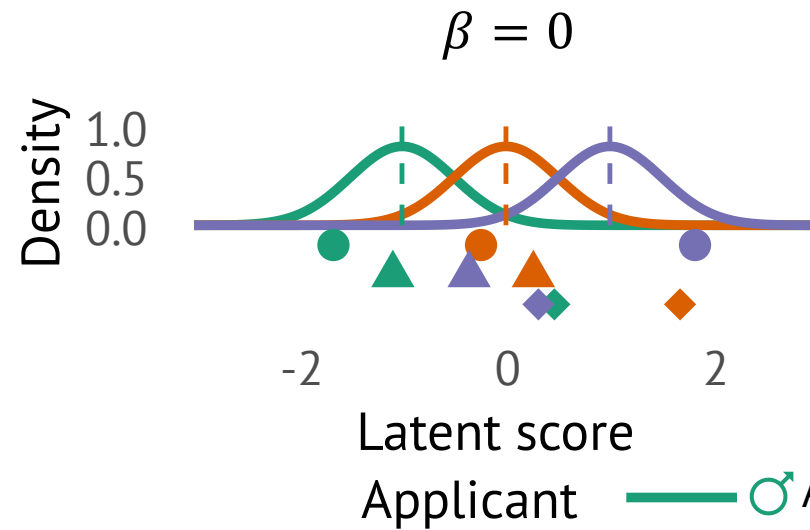


Randomised controlled trial

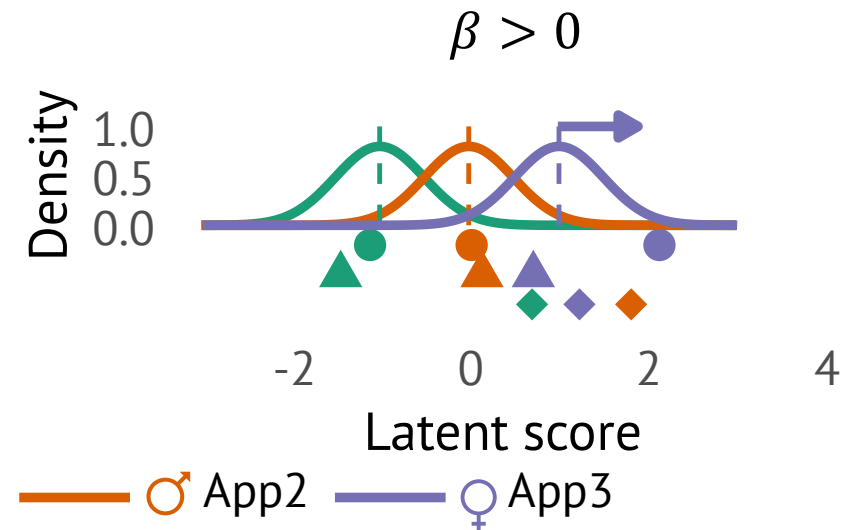


Does the use of the
Narrative CV format change
the application experience
and **shortlisting outcomes** in
postdoc recruitments
at Cambridge?

Thurstonian model



	Panel members		
Rank	•	▲	◆
1st	App3	App2	App2
2nd	App2	App3	App1
3rd	App1	App1	App3



	Panel members		
Rank	•	▲	◆
1st	App3	App3 ↑	App2
2nd	App2	App2 ↓	App3 ↑
3rd	App1	App1	App1 ↓

Thurstonian model

CV type
effect

CV x Applicant
effect

CV x Recruitment
effect

$$\eta_i = \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_1 x_2 + \beta_4 x_1 x_3 + \beta_5 x_1 x_4 + v_i$$

Applicant
latent score
(i.e., suitability)

Applicant
effect

CV x Panel
Member effect

Applicant-specific
random effect



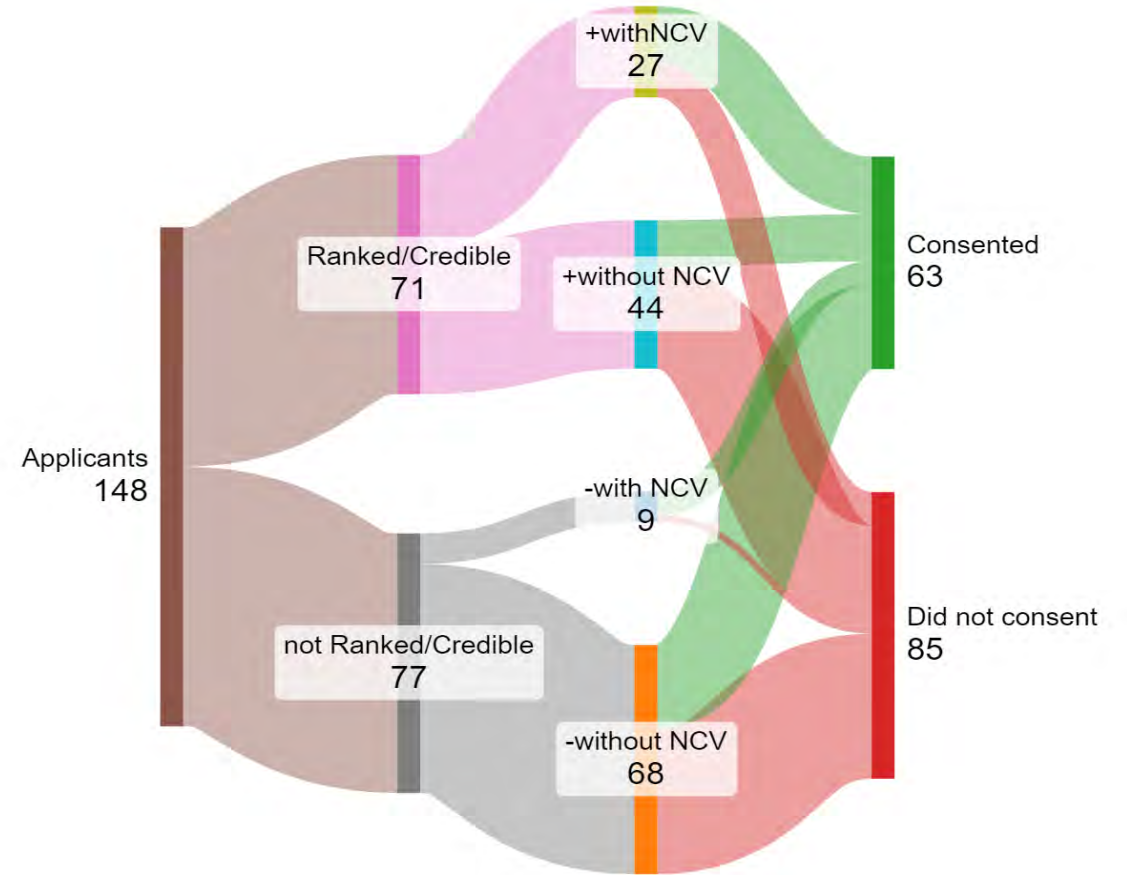
Generative model

Pilot study

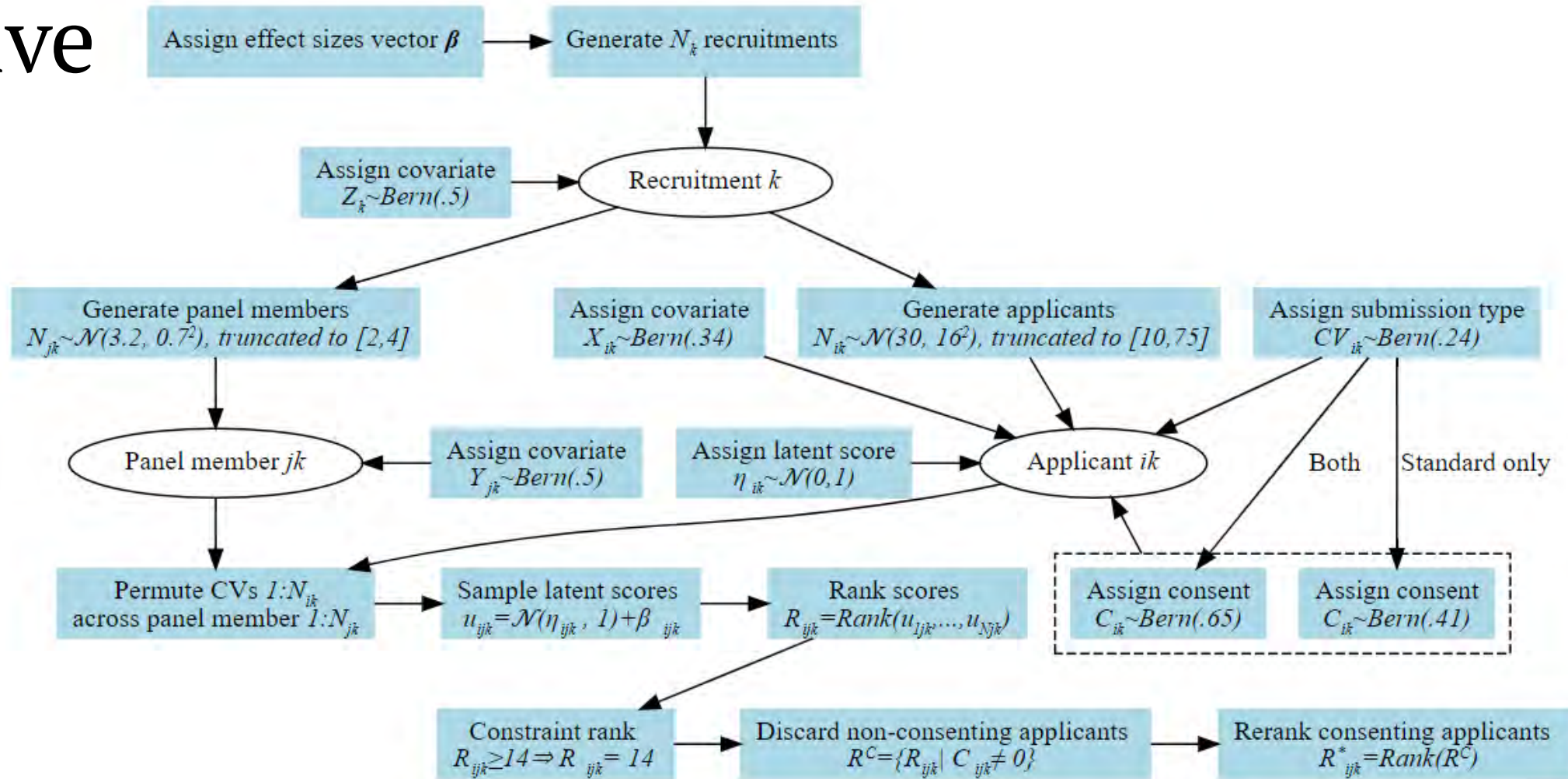
5 recruitments in STEM disciplines

**Compliant/Consenting (i.e.,
Participants)**

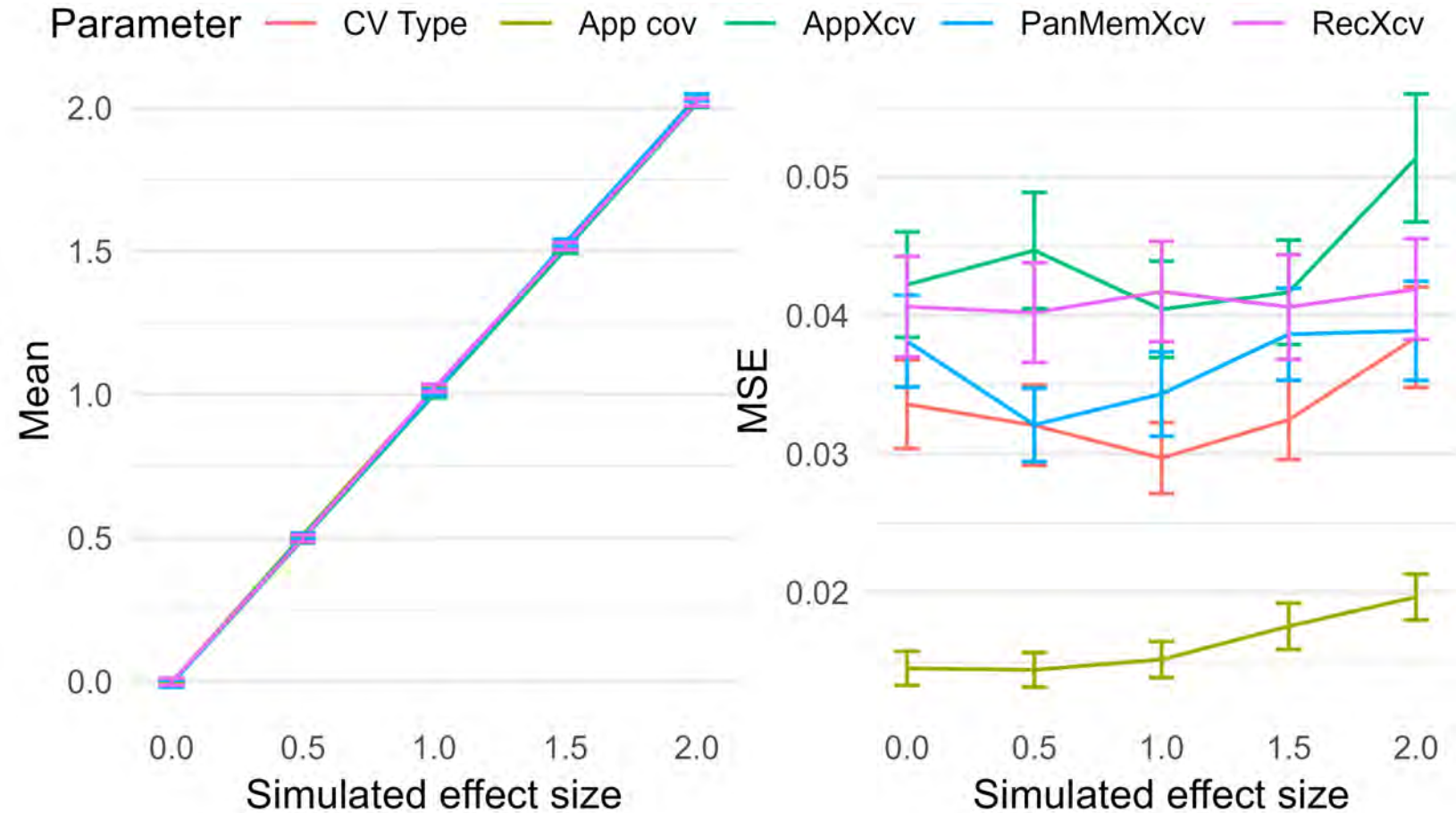
- 15 Panel Members
- 63 Applicants



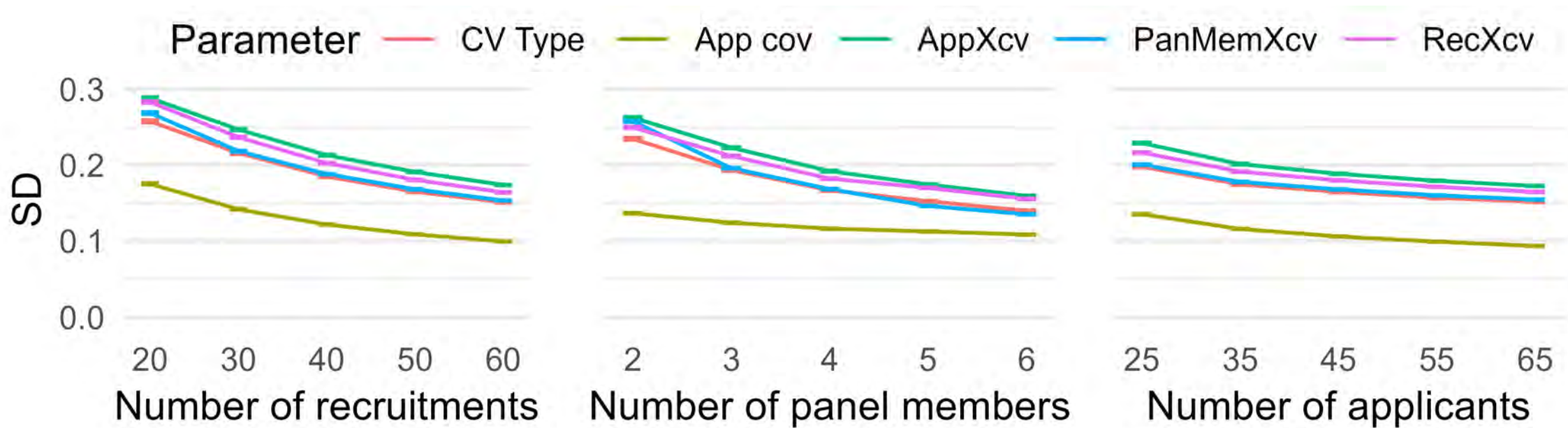
Generative model



Simulations – effect recovery



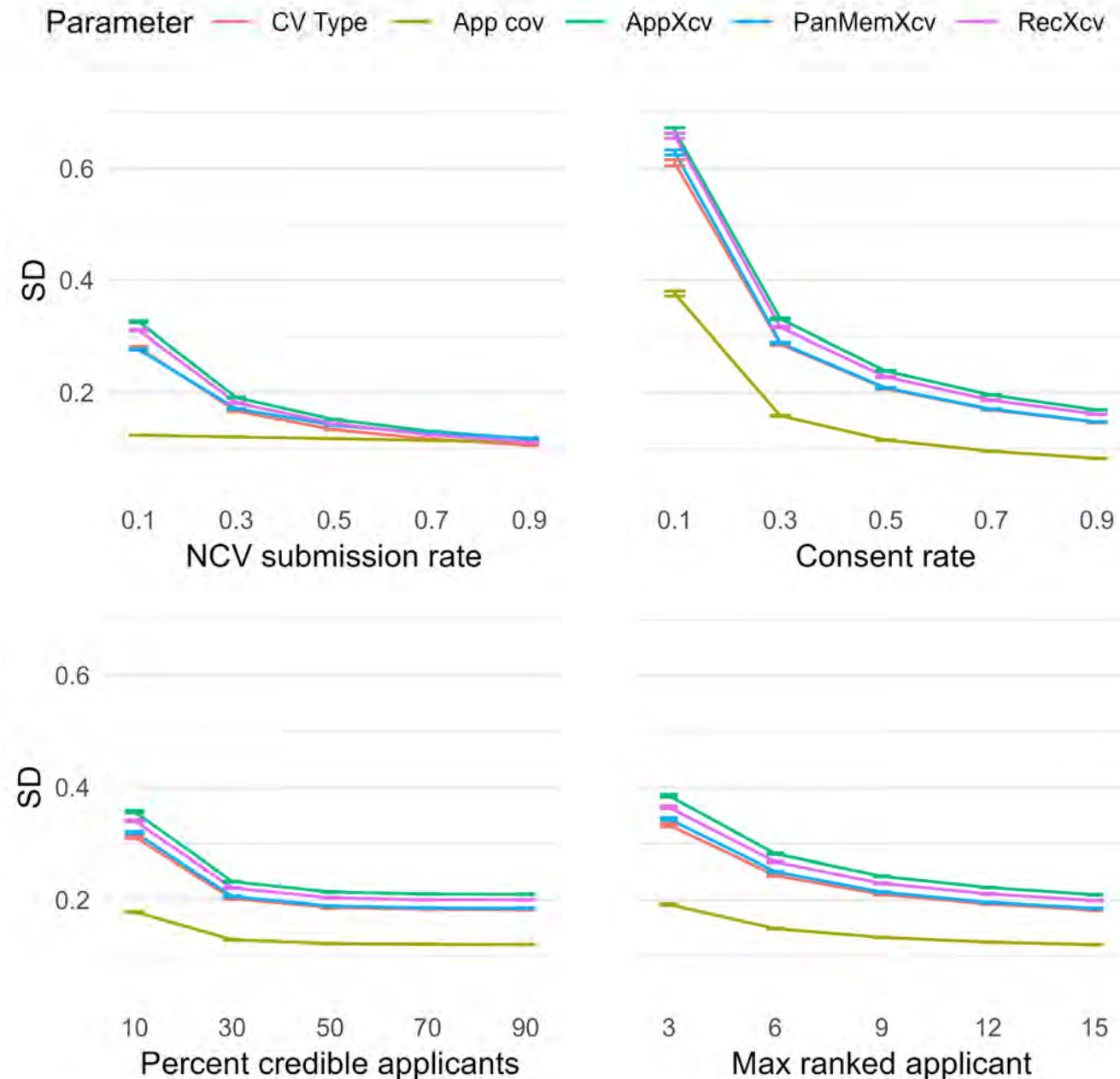
Simulations – sample size



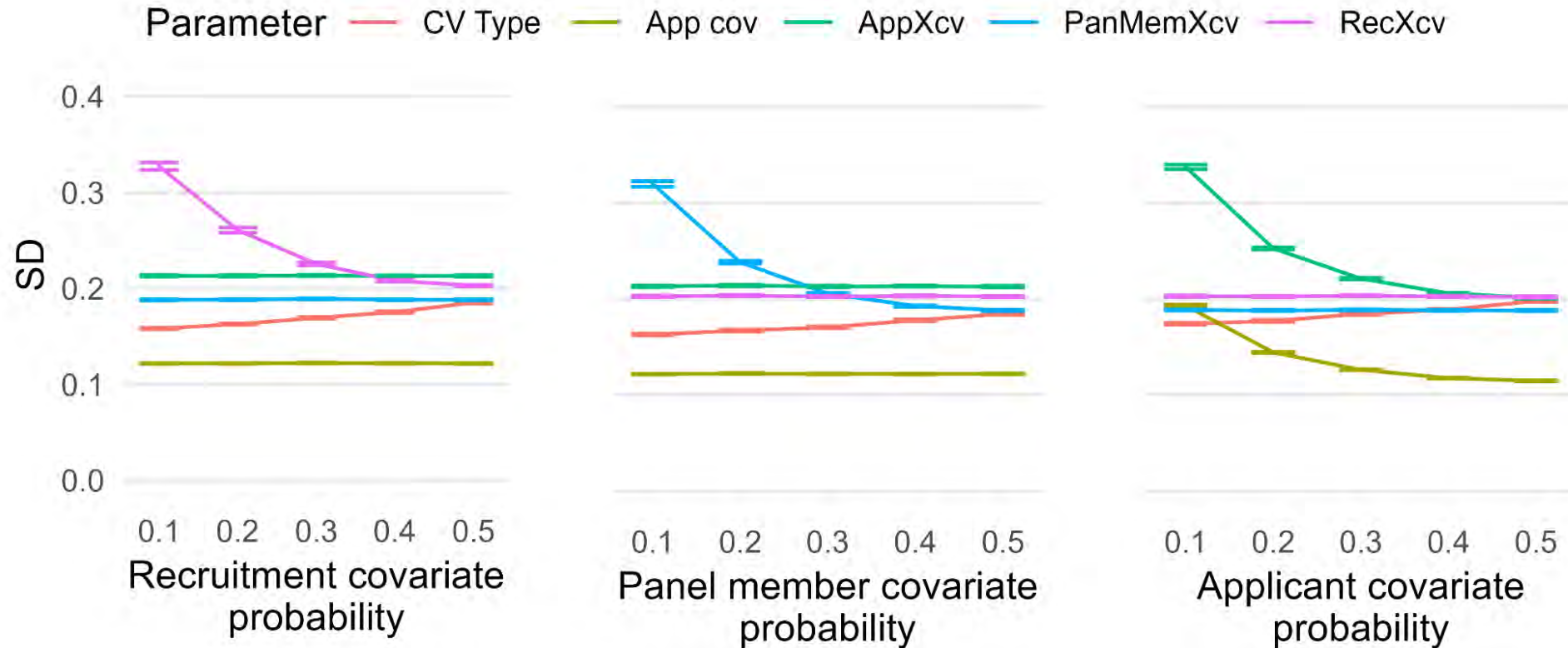
- Recruitment & PM numbers are key
- 3+ panel members ideal
- Recruitments with few applicants are fine

Simulations – Submission, consent, and ranking

- Consent rate is key
- Try reaching 30-50%+ submission rate
- 30% (consenting) credible applicants are sufficient
- Continue asking PM to rank at least 10-12



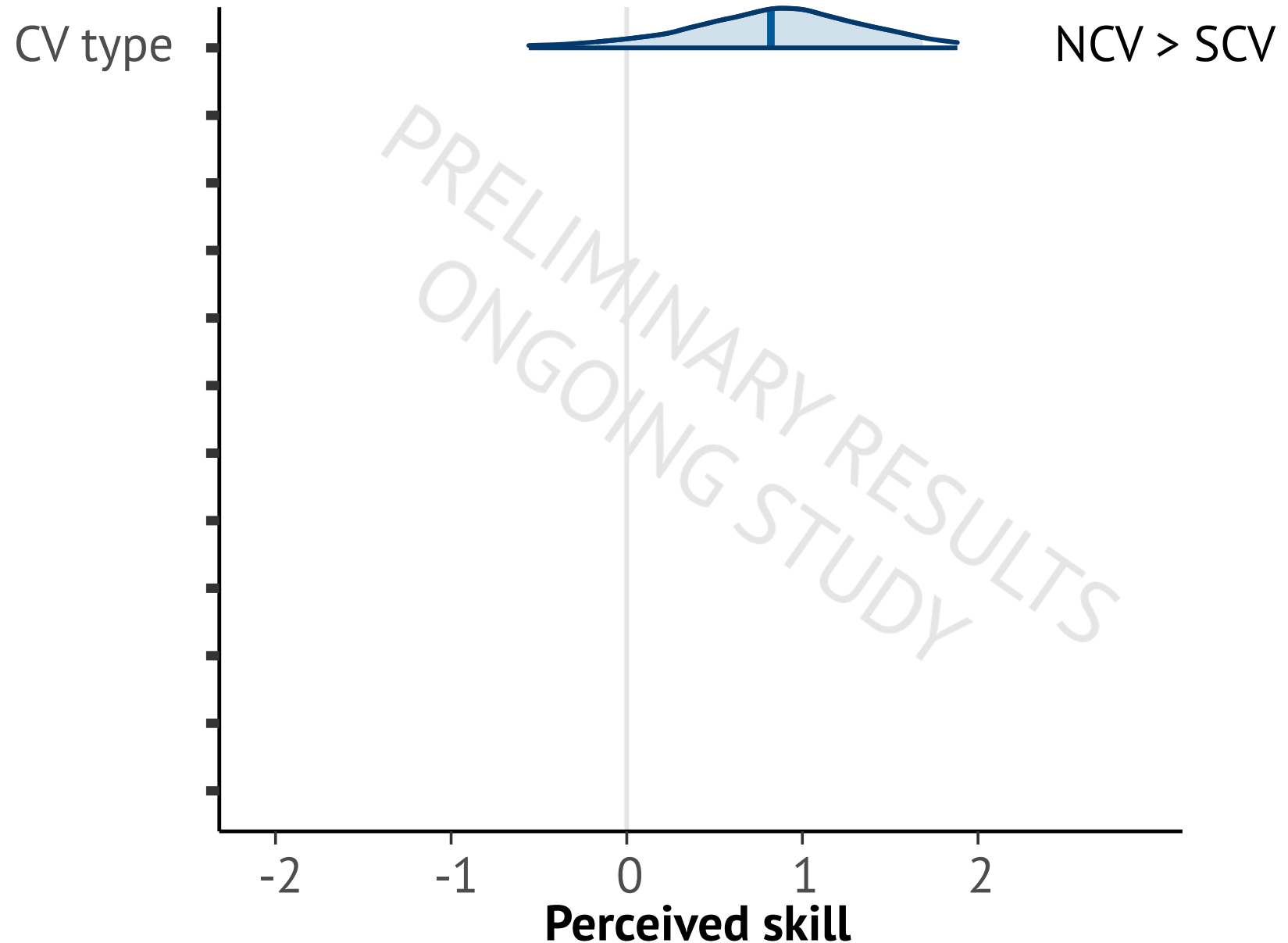
Simulations – sample characteristics



- Rare (<20-30%) characteristics will be harder to estimate

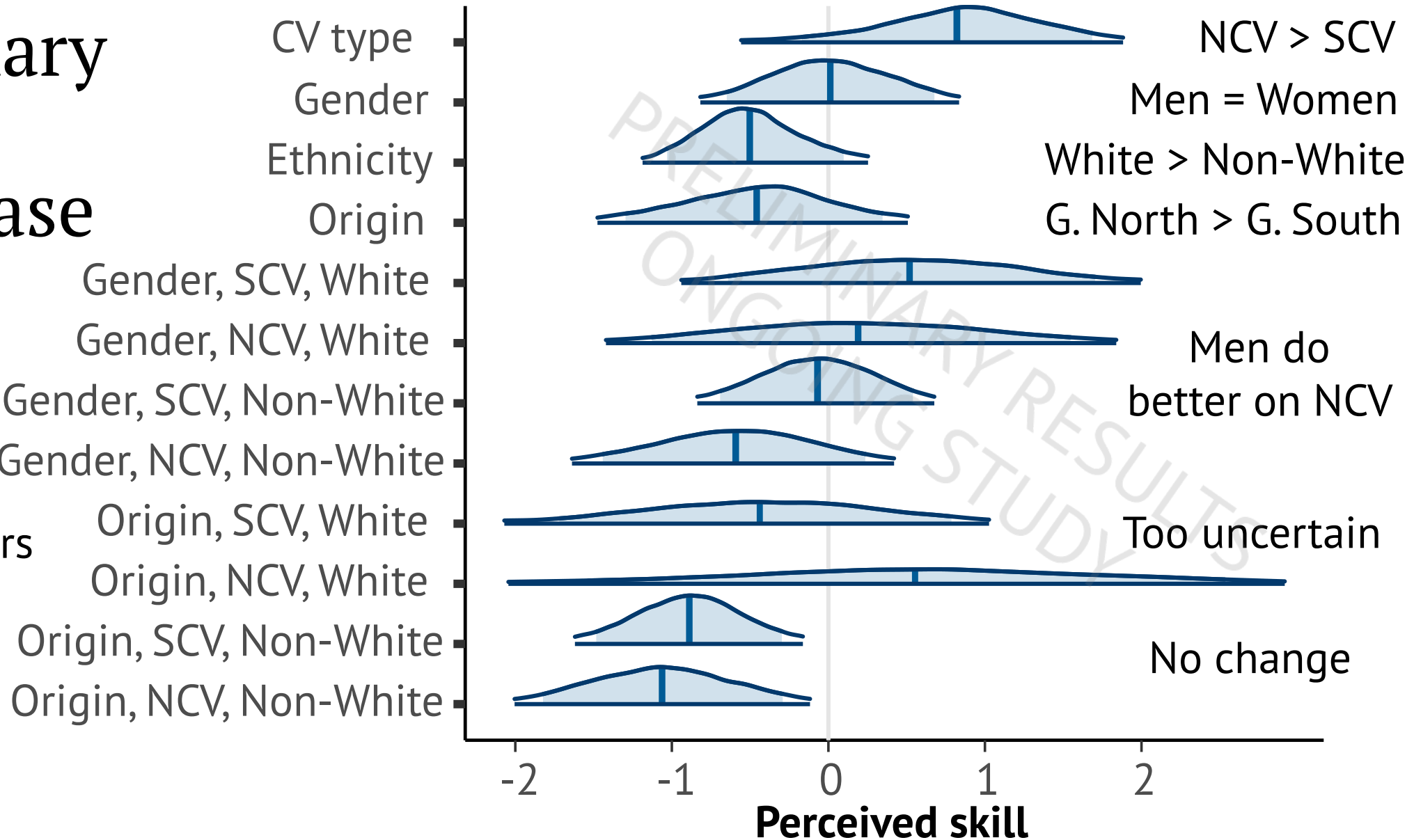
Preliminary results – main phase

13 recruitments
37 panel members
172 consenting
applicants



Preliminary results – main phase

13 recruitments
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(Emerging) conclusions

Simulation

- Useful in informing design decisions for scarce data
- Focus on:
 - Participating recruitment numbers
 - Applicant consent rate
 - Number of ranked applicants

Study

- Applicants generally ranked higher on NCV than SCV
- Some preliminary evidence of greater gender disparity using NCV
- No evidence of benefit for NCV for non-white applicants from the Global South

Thank you!

Preprint available
on [MetaArXiv](#)



Learn more at the
[ARRC project website](#)

