

Navigating Research Realities on a Small Island

Lessons from a PhD
Healthcare Project
on Aruba

Dutch Caribbean Research Week
June 17, 2026



KU LEUVEN



Navigating Research Realities on a Small Island



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Lessons from a PhD
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PhD Project:

Ageing in Place in Aruba in Comfort and Security with Artificial Intelligence

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1 Katholieke Universiteit Leuven (KU Leuven), Belgium

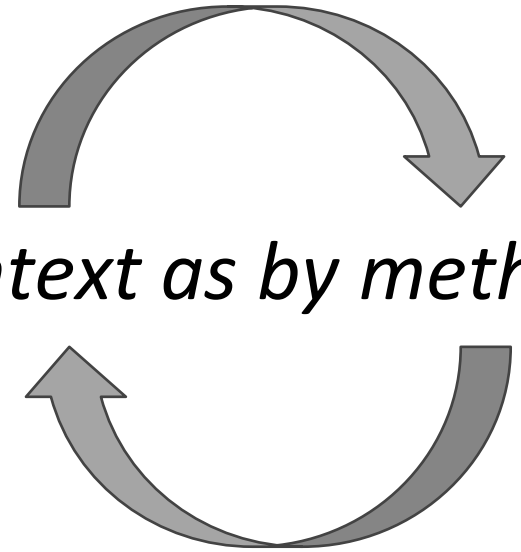
2 University of Aruba

3 Stichting Algemene Bejaardenzorg Aruba (S.A.B.A.)



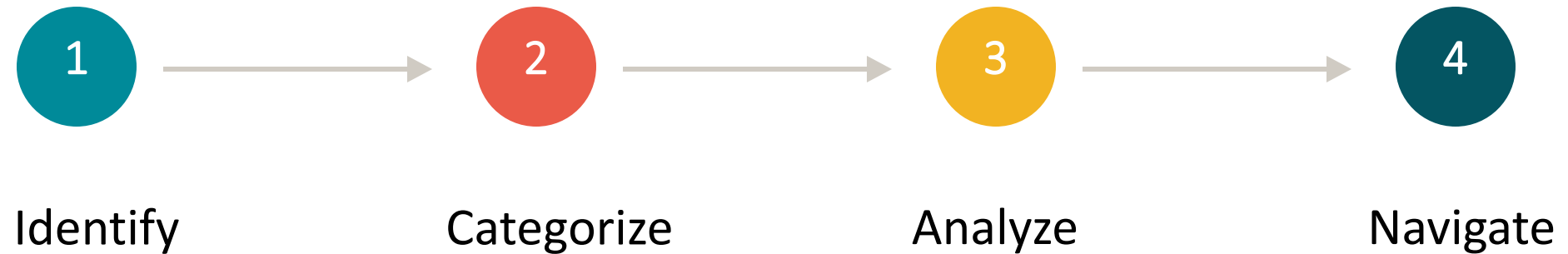
Talk thesis

*Small-island research can be **reshaped** by context as by method.*



Methodological adaptation

Tools to critique your own research project

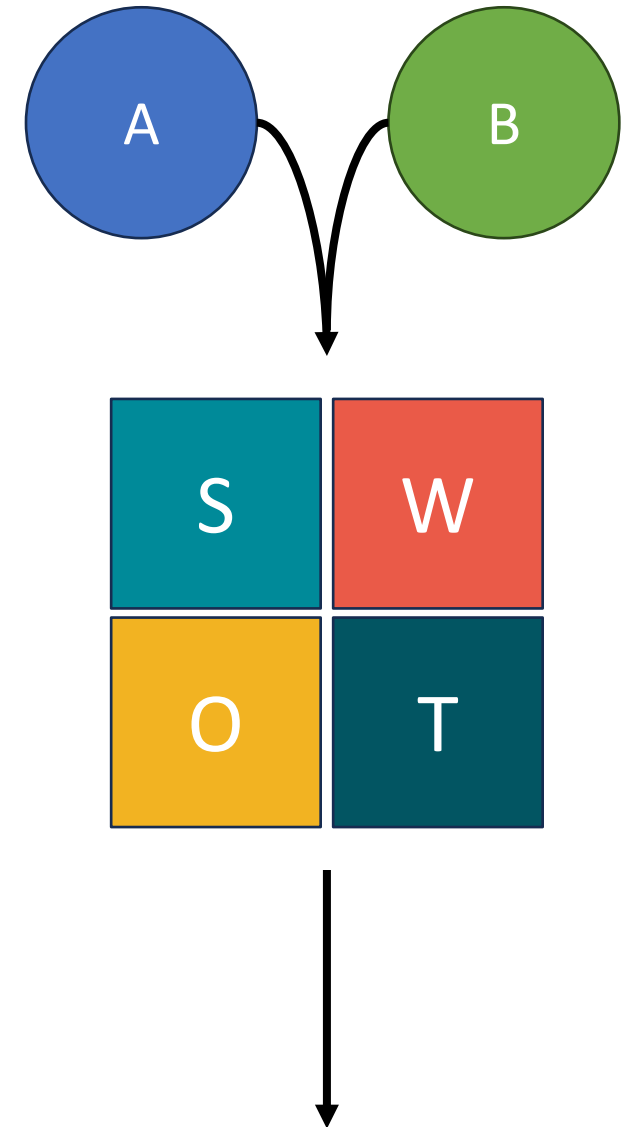


Six challenges grouped by three categories



*Mertens, A., Acevedo, D., Arens, P., Becker, T., Brinklow, L., de Scisciolo, T., ... & Mijts, E. (2025).
How island researchers navigate the wicked nature of small island research. A conversation continued.*

Strengths Weaknesses Opportunities Threats Analysis



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SWOT analysis: sample availability (size)

Strengths

- Lower recruitment resources required
- 4 repeated sessions enough for acceptable S2N ratio

Opportunities

- Sample size directly depends on resource constraints
- Capacity to focus on sample quality

**presume lower
personalization
over
generalization**

Weaknesses

- Abandon hypotheses targeting larger groups
- Settling on a maximum for your trial

Threats

- Repeated measures introduces new risks
- May require longitudinal study design

SWOT analysis: sample quality

Strengths

- More accessible (in resources devices)

Weaknesses

- More noise and bias
- Increased maintenance (devices)

Opportunities

- Faster data acquisition
- Facilitate innovation

Threats

- Extended data collection
- Higher malfunction risk (device)

**presume lower
lower quality
over
higher quality**

SWOT analysis: absent local ethics committee

Strengths

- Less administration when in compliance

presume absent
external oversight
over
local oversight

Weaknesses

- Dependence on external institutions
- Little to no local accountability

Opportunities

- Faster assessment
- Facilitate innovation in study design

Threats

- Impasse (e.g., double verification)
- Journal rejection

SWOT analysis: data anonymization

Strengths

- Reduce participant risk
- Build participant trust

Opportunities

- Foundation for future (public) use
- Awareness and experience training

presume riskier
full anonymization
over
pseudo anonymization

Weaknesses

- No follow-up during/after study
- Weakens analyses

Threats

- Falsification/fabrication detection risk (for both researcher and participant)

SWOT analysis: equipment and materials

Strengths

- Budget is scope aligned
- Higher feasible protocol

Weaknesses

- Narrower research claims
- Lower technical precision

presume inadequate
aligned over misaligned
hypothesis/experiment

Opportunities

- Validate locally viable methodology
- Iterative research plan

Threats

- Equipment/processes still fail
- Insurance/Service coverage

SWOT analysis: support system

Strengths

- Reduced single-point failure
- Timeline resilience

Weaknesses

- Extra coordination load
- Higher initial cost
- Slower initial planning

Opportunities

- Broader stakeholder network
- Backup location agreements

Threats

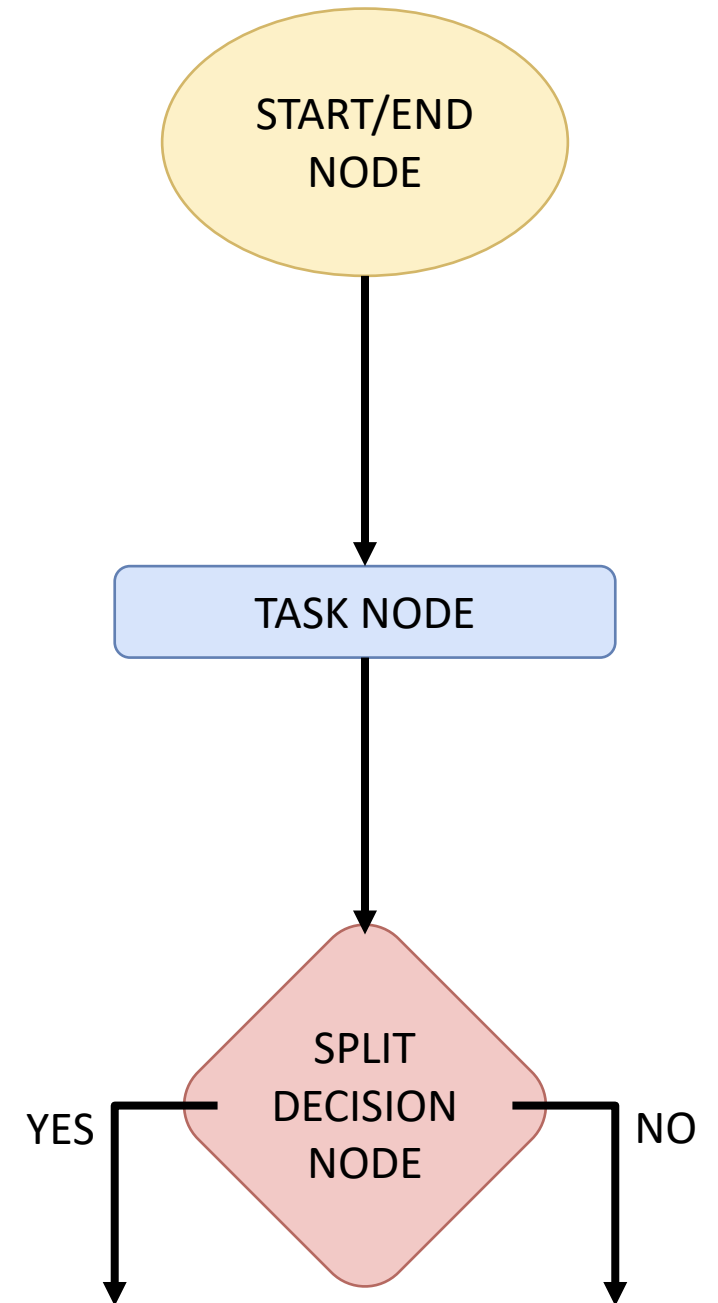
- Logistical bottlenecks
- No on-island domain/service expert

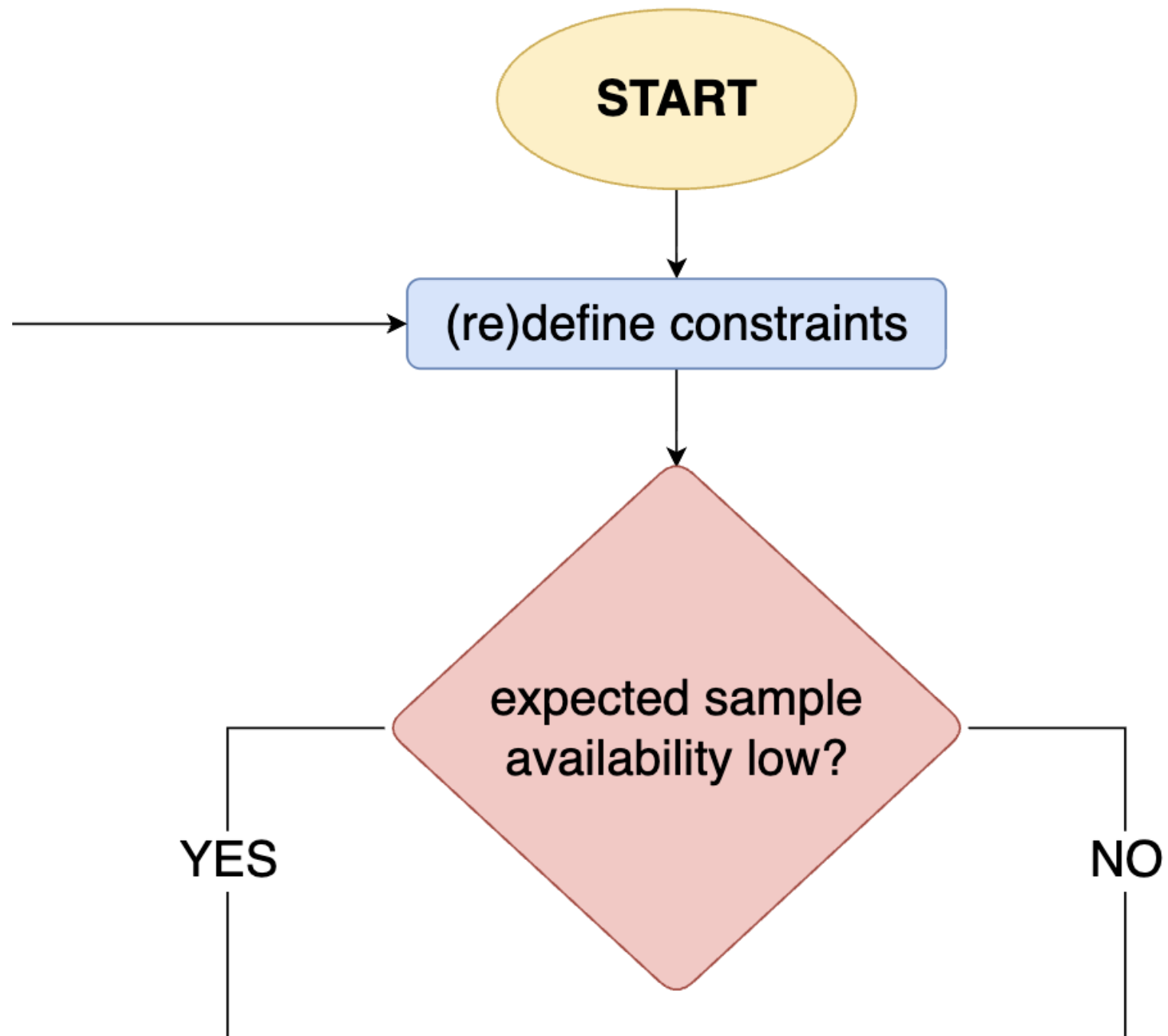
presume fragile
plan for redundancy
over
singular failure points

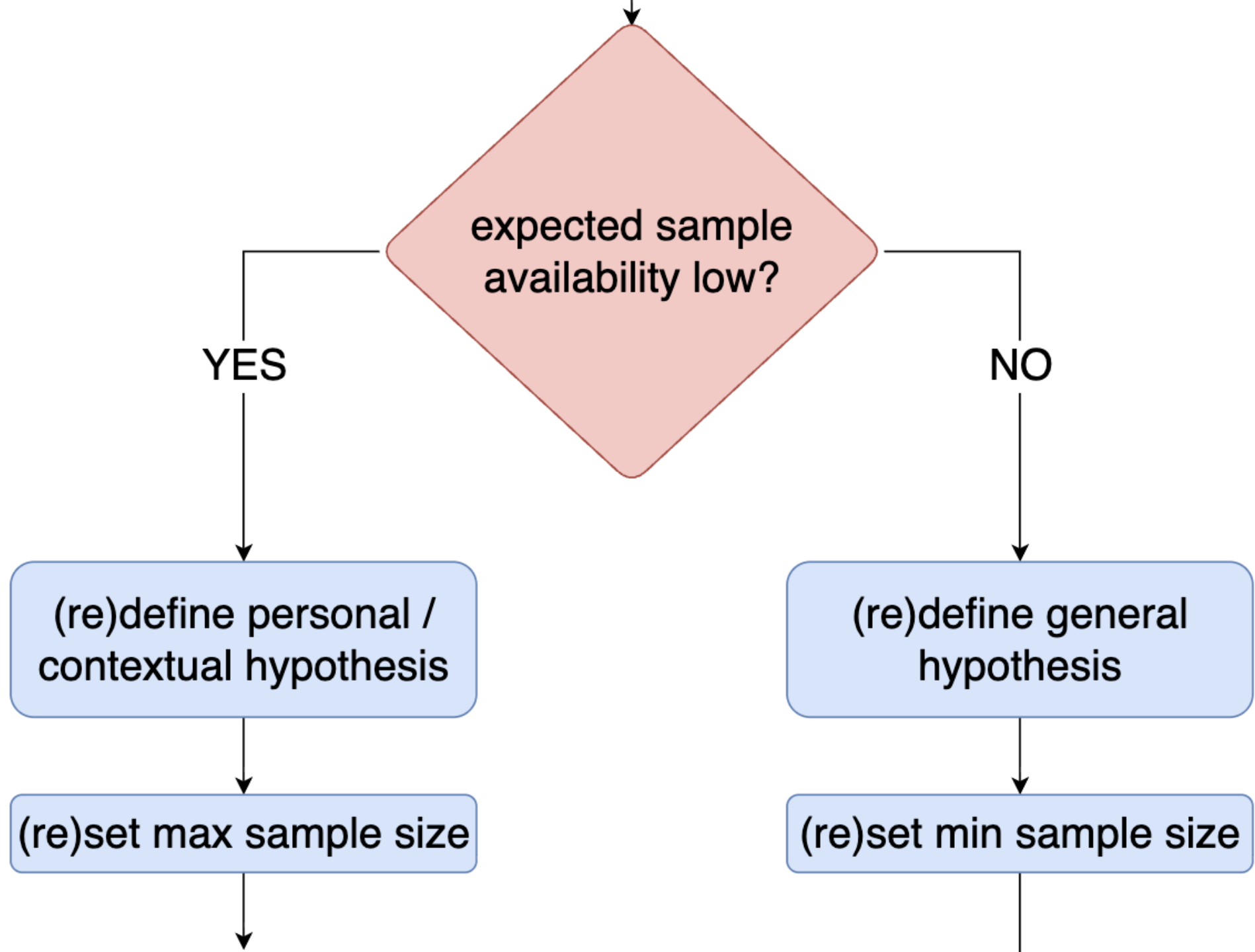
Flow chart navigation

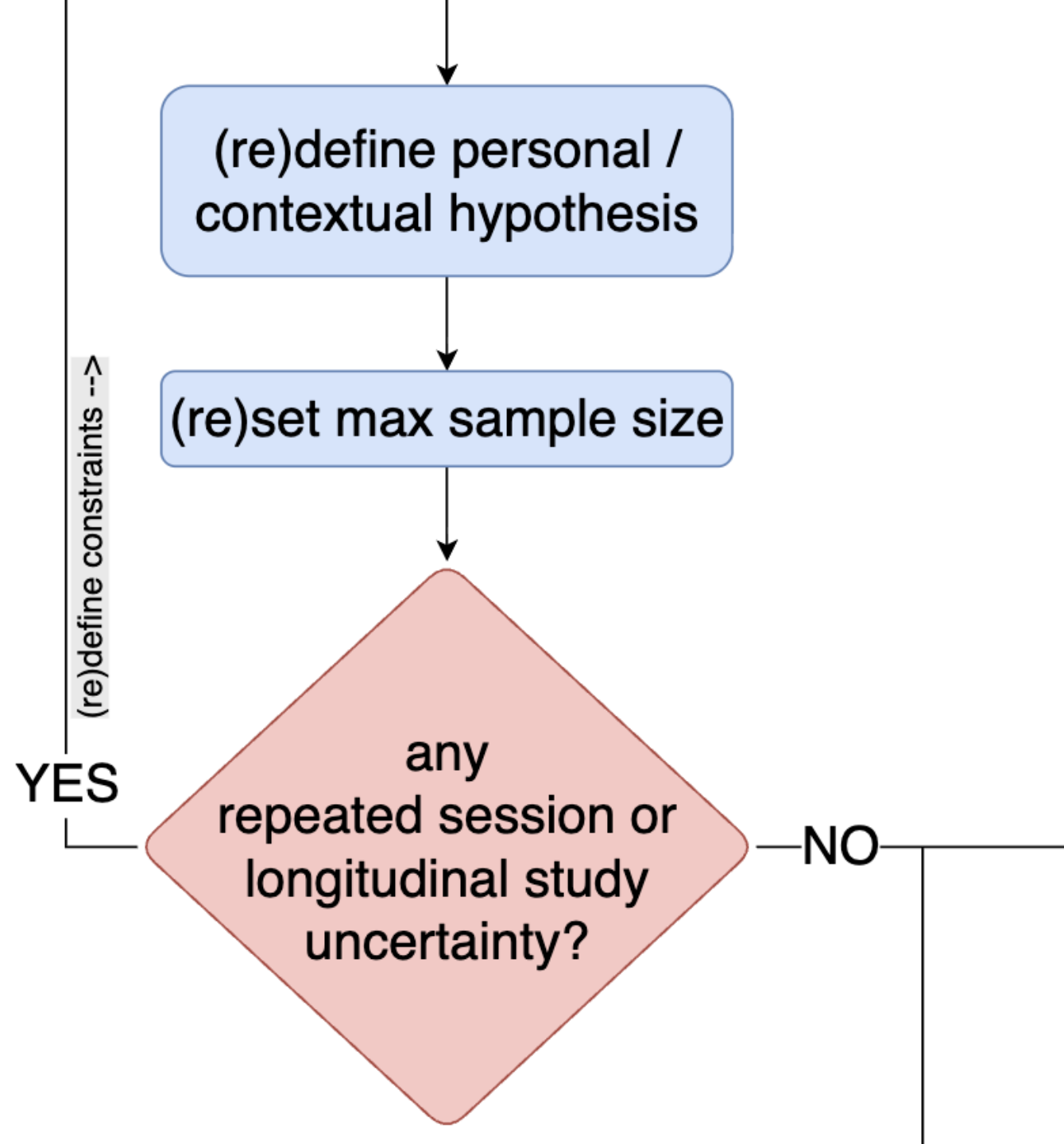


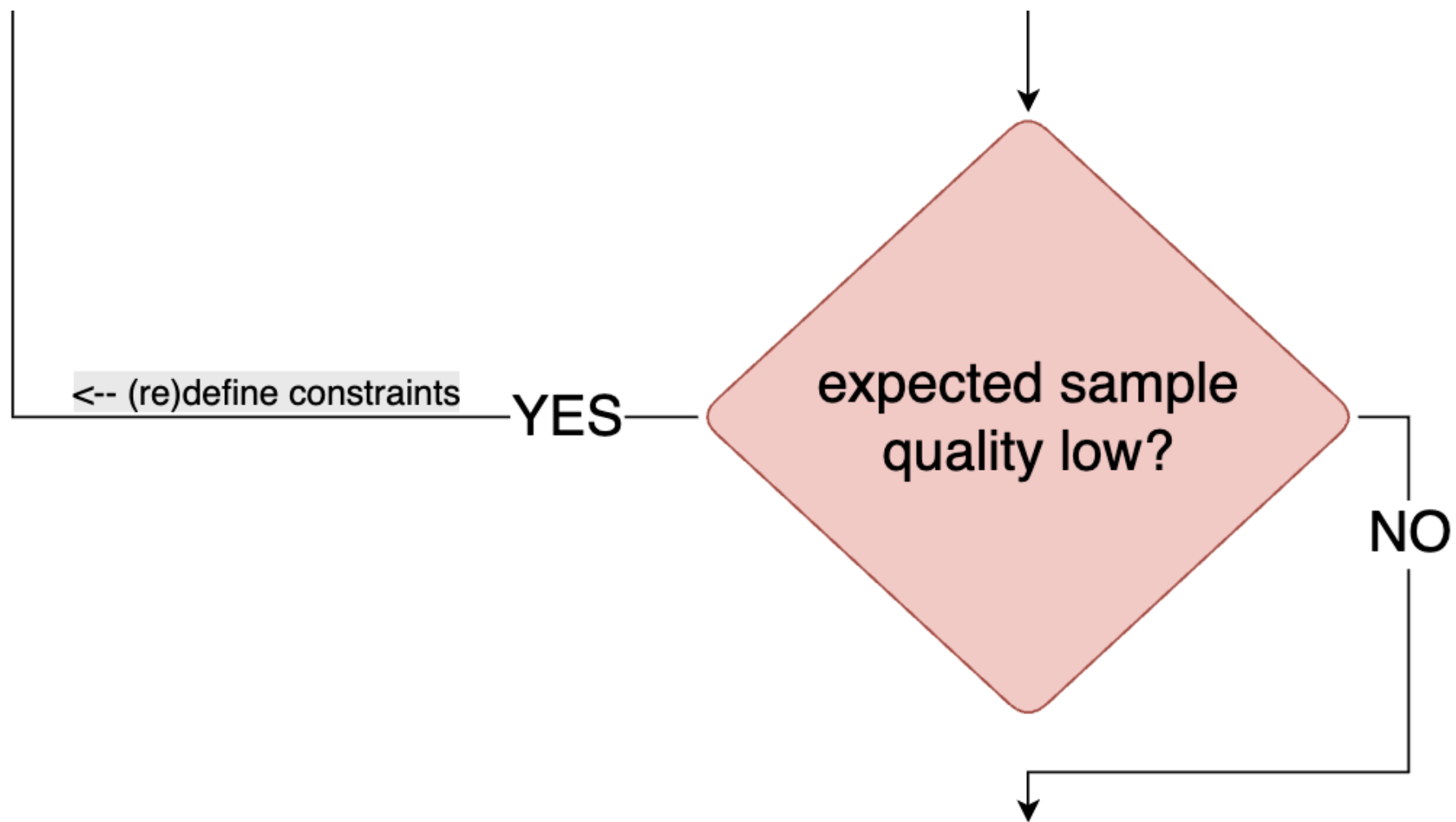
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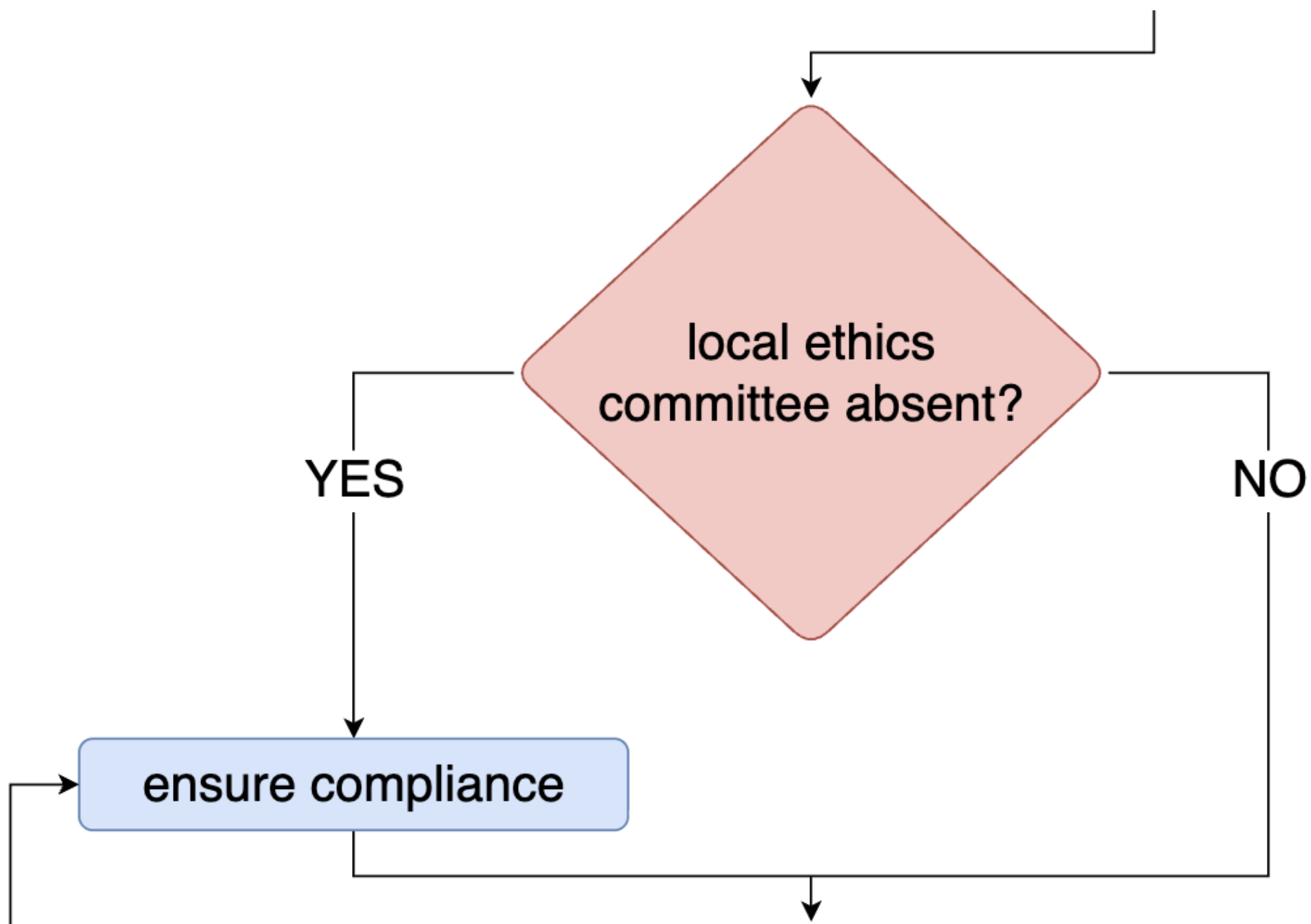


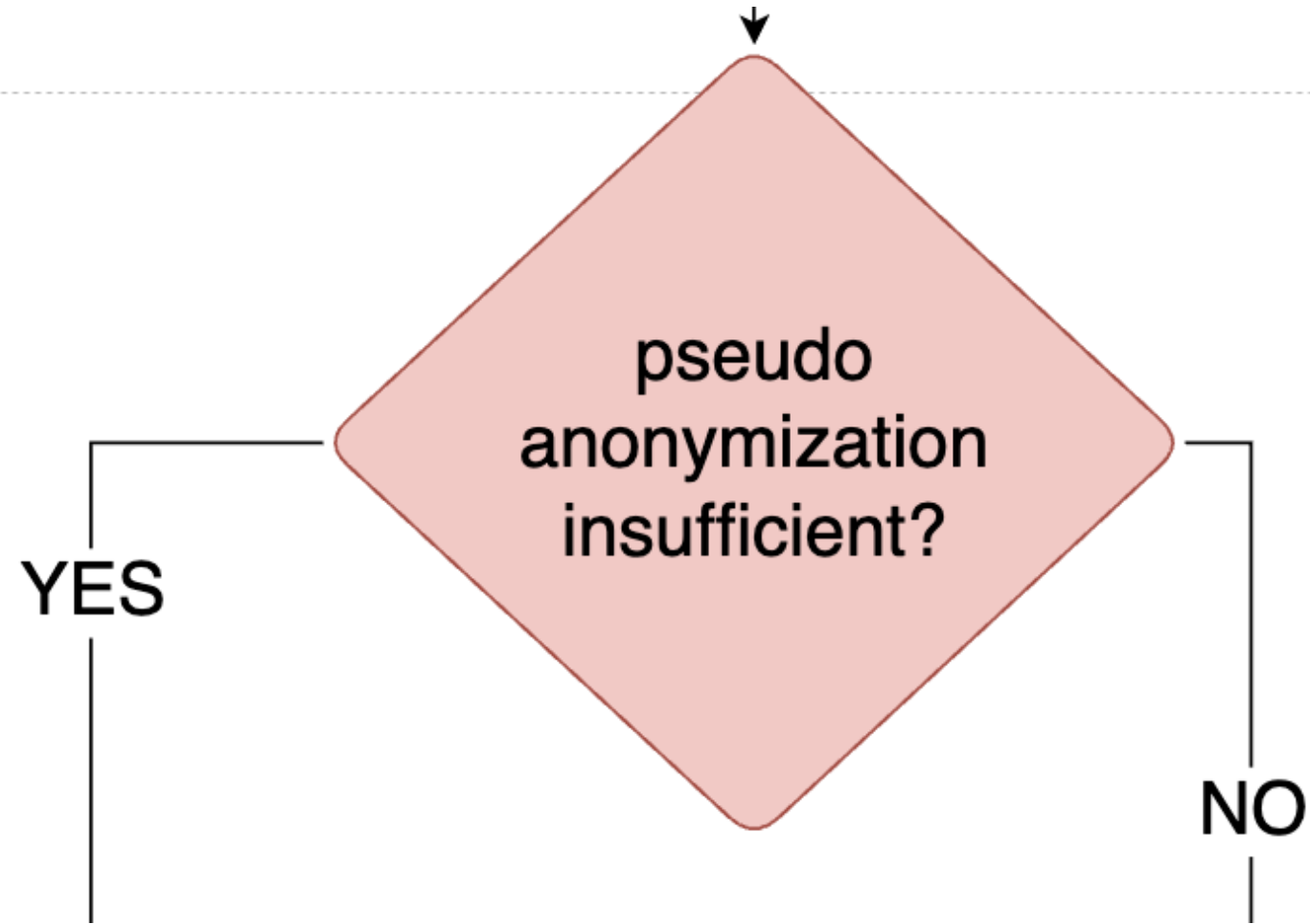


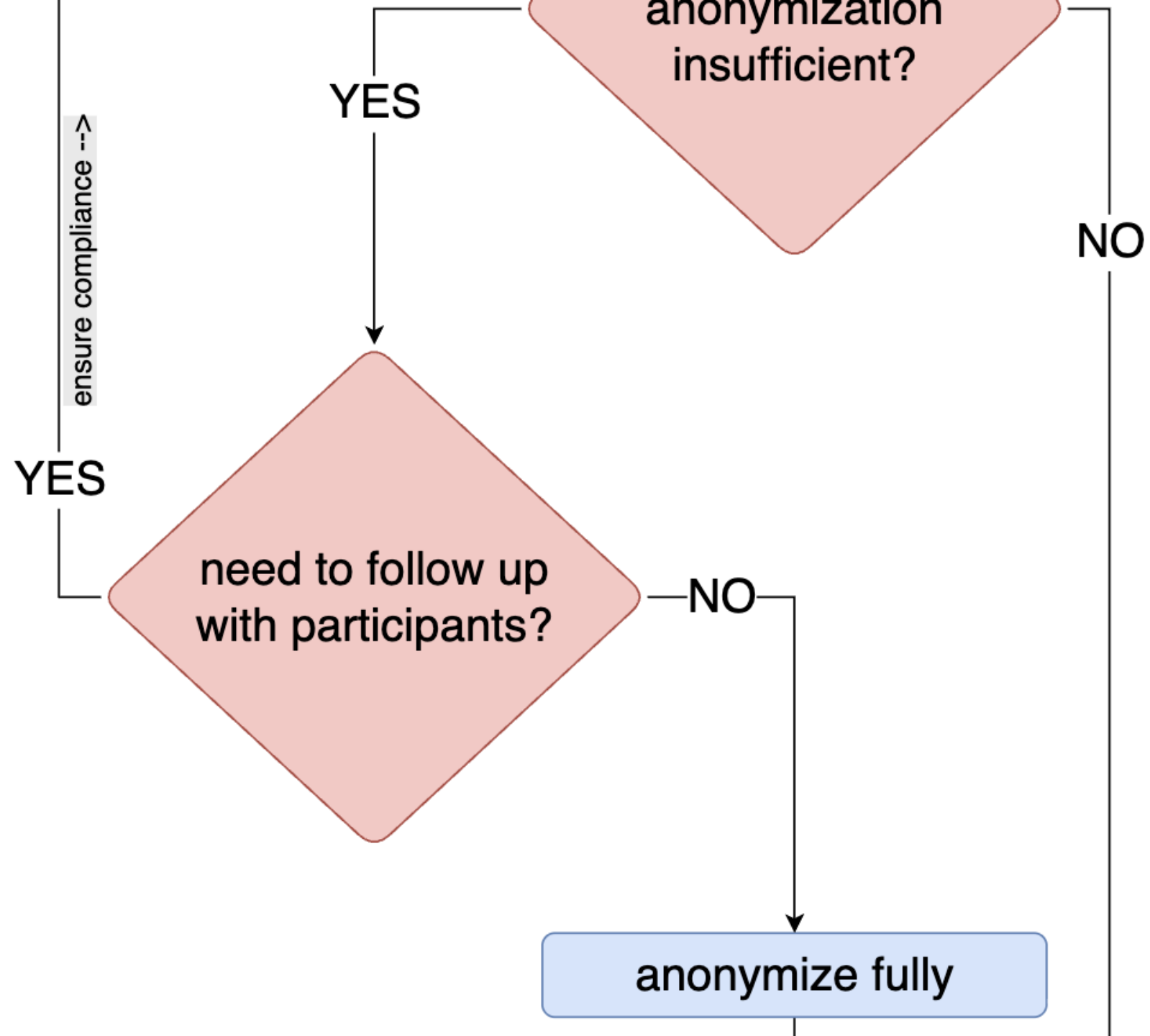












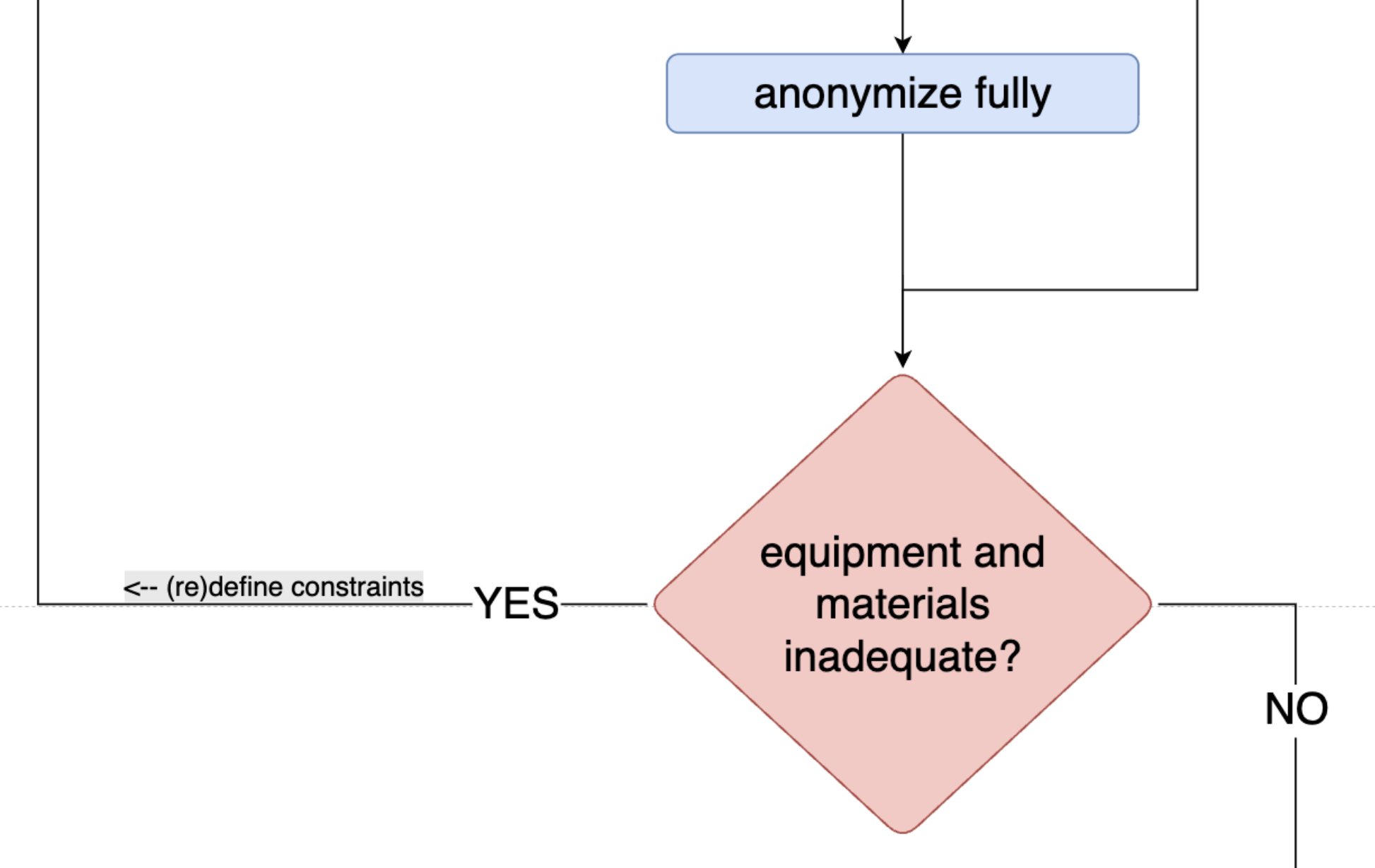
anonymize fully

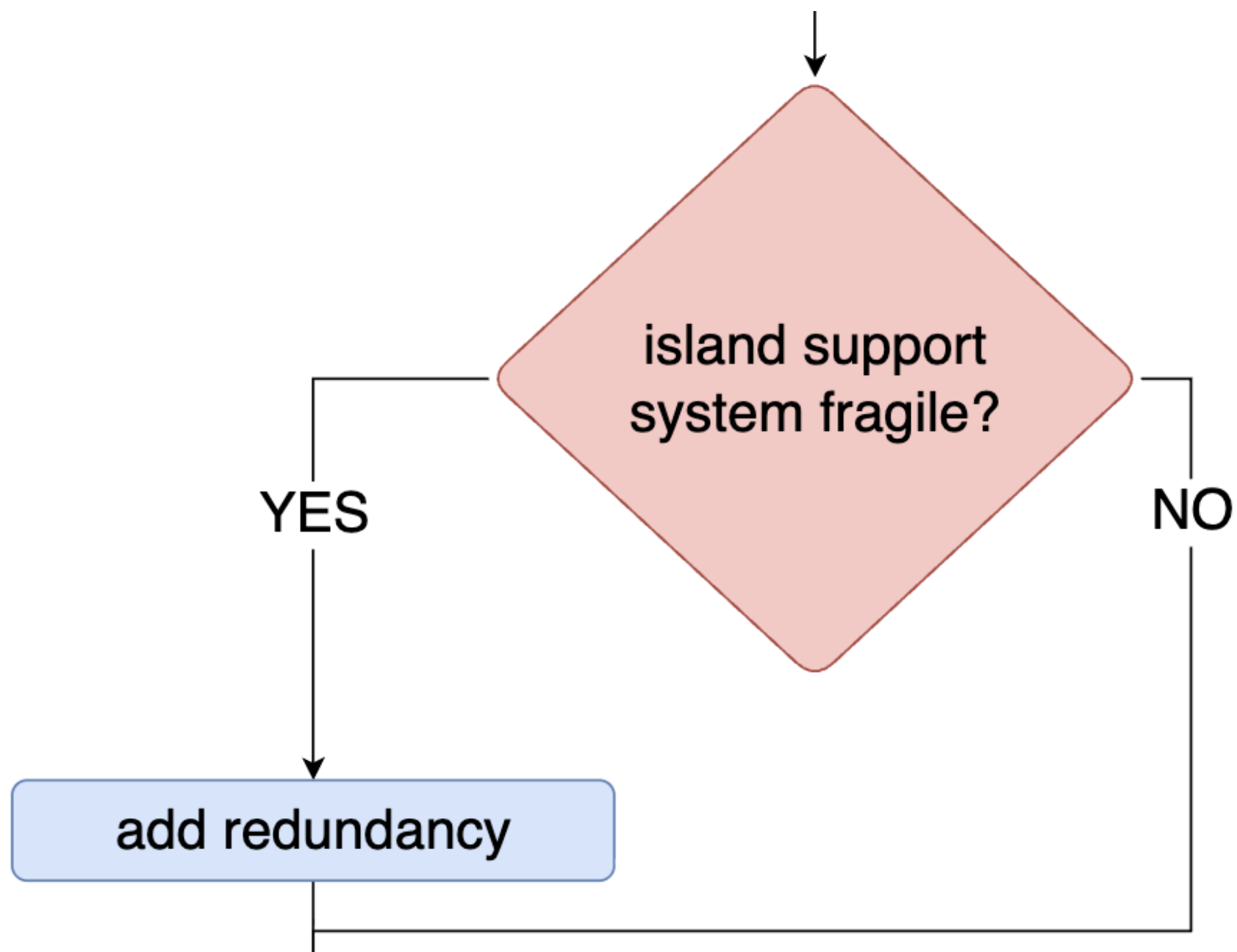
equipment and
materials
inadequate?

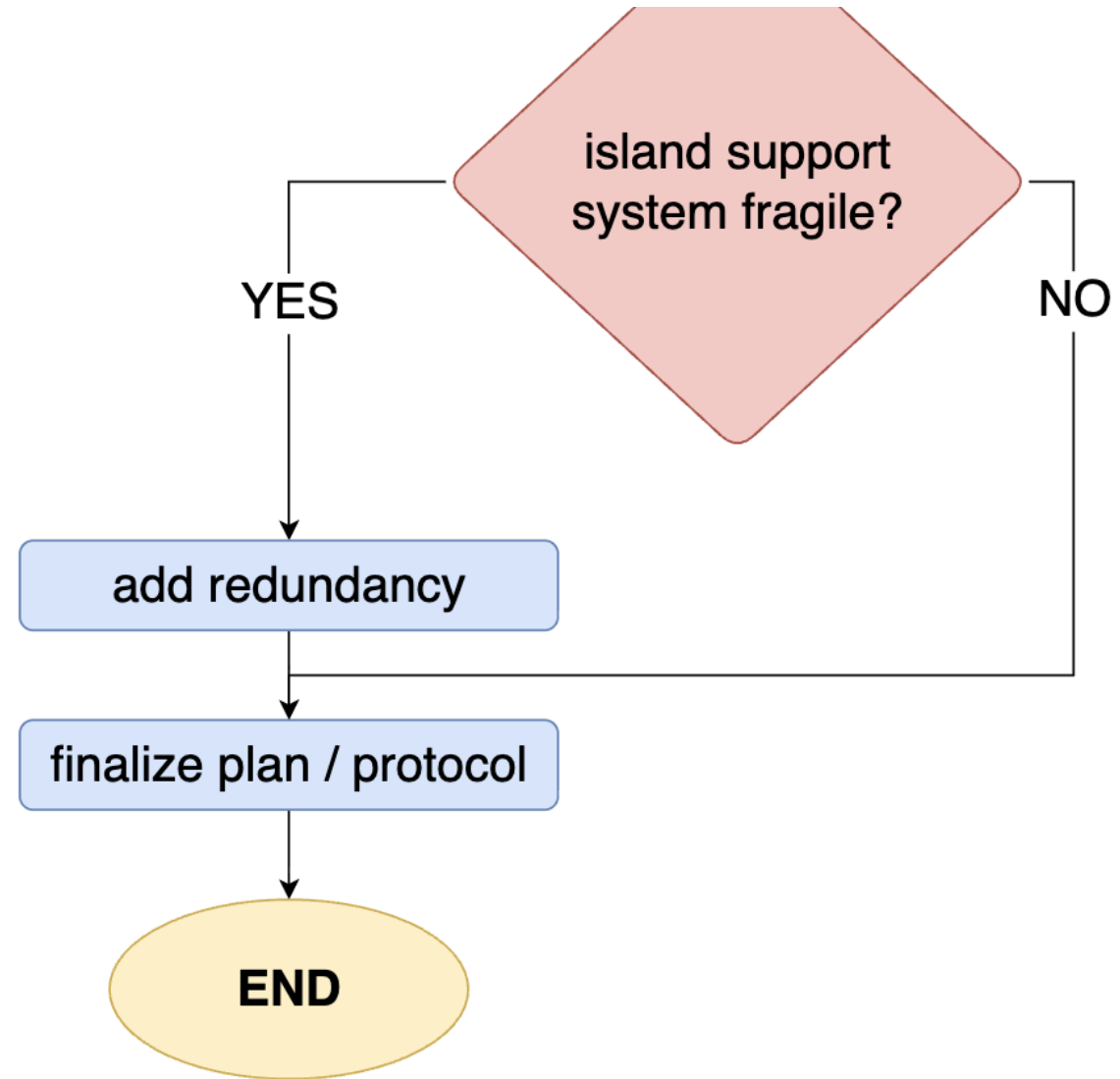
<-- (re)define constraints

YES

NO







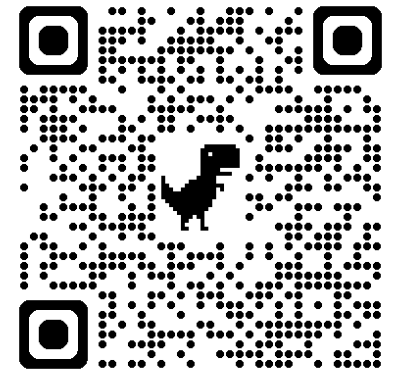
Closing tips and an invitation to collaborate

- Do in-depth risk analysis, e.g. equipment fragility, ideally before embarking any journey.
- Consider smaller backup research questions for your project.
For example: if your research question depends on XYZ, assess whether due to small-island constraints you can only obtain XY or even X. Consider a research question for just XY and then another one for just X.
- If you are doubting to include a low-hanging in your experiment protocol, just do it. It is always better to collect more data than regret afterward during the modeling phase.

Flowcharts open for collaboration on the University of Aruba GitHub:
<https://github.com/University-of-Aruba/navigating-small-island-research-dcrw>



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Try it
interactively.

Small-island research does not have to be a limitation.
Instead, it can be a different scientific paradigm that demands its own set of meta tools.

Thank you!



Q&A

Kick-off question:

What would make this framework useful for other Dutch Caribbean research projects?

Francis Laclé & Dr. Salys Sultan / Navigating Research Realities on a Small Island



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Try the flow
interactively.

References

Benson, A. P., Bowen, T. S., Ferguson, C., Murgatroyd, S. R., & Rossiter, H. B. (2017). Data collection, handling, and fitting strategies to optimize accuracy and precision of oxygen uptake kinetics estimation from breath-by-breath measurements. Journal of Applied Physiology.

Hambleton, I. R., & Jeyaseelan, S. (2024). The silent barrier: exploring data availability in Small Island Developing States. Revista Panamericana de Salud Pública, 48, e80.

Mertens, A., Acevedo, D., Arens, P., Becker, T., Brinklow, L., de Scisciolo, T., ... & Mijts, E. (2025). How island researchers navigate the wicked nature of small island research. A conversation continued.