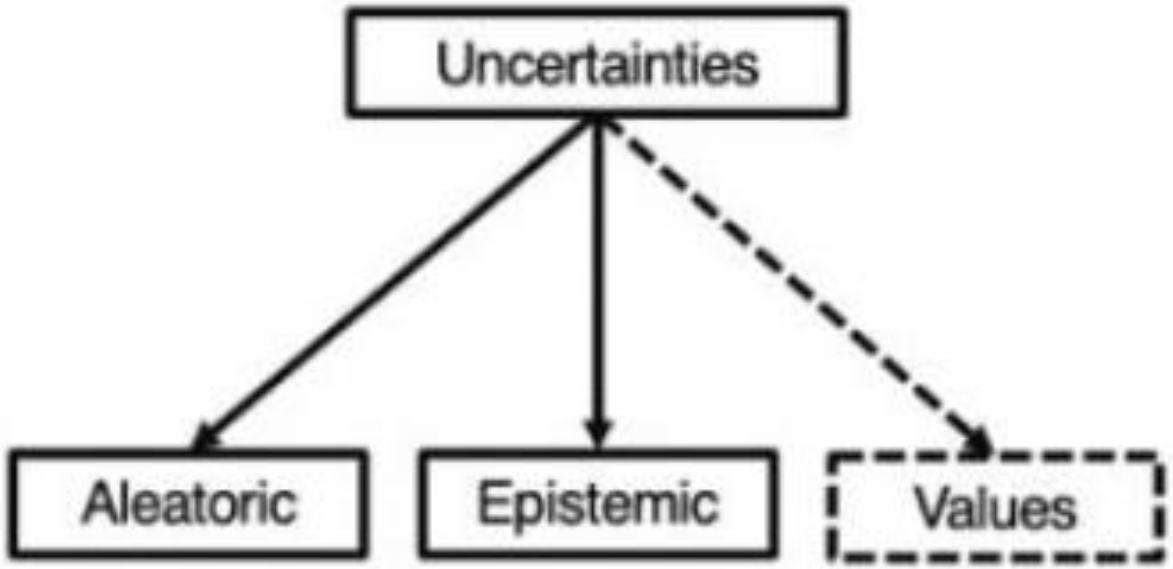
# Are we talking about the same future?

## Stakeholder ambiguity in distribution network planning

**Adam Duncan – UCL**

***Supervisors* – Prof. David Shipworth, Dr Olly Smith**

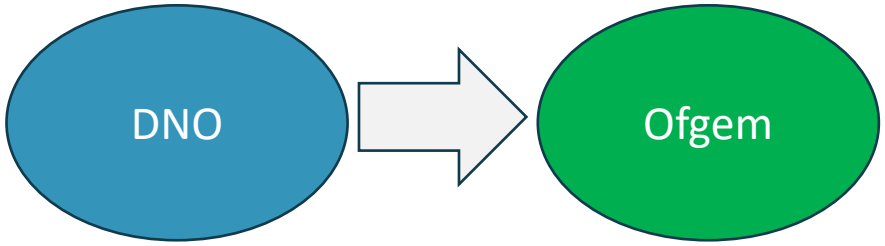
# Ambiguity as a form of uncertainty



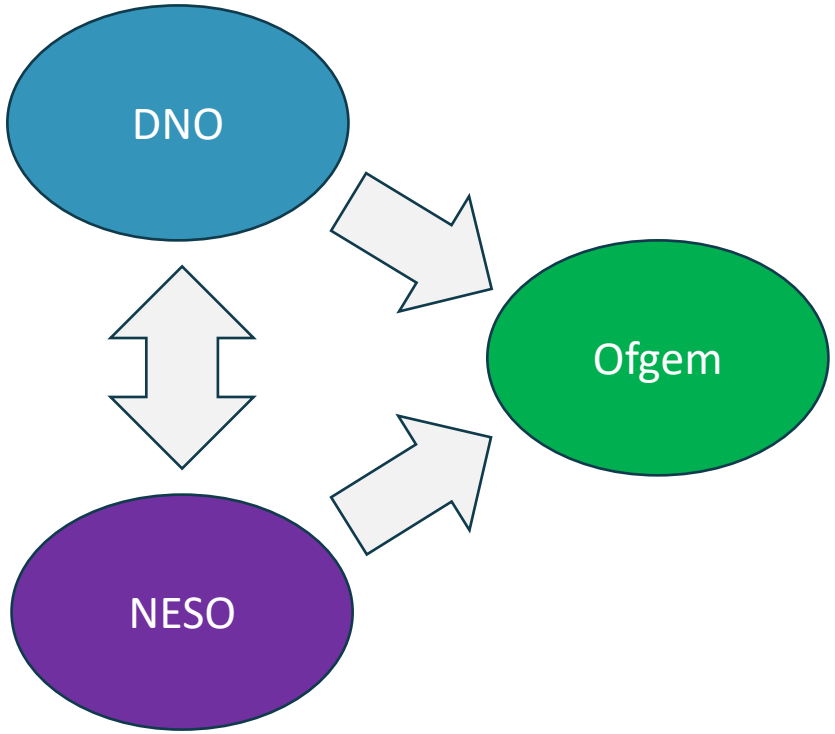
# Regional Energy Strategic Planning (RESP)

# RESP and ambiguity

**Pre-RESP**




**Post-RESP**



# Questions for the research

- How homogenous are views of people who work on LV network planning?
- Are the views grouped by organisation?

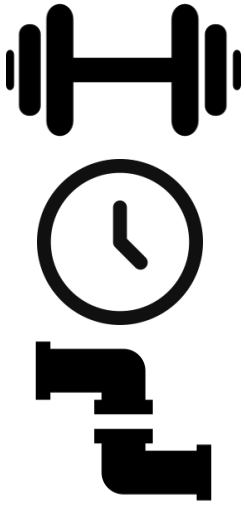
# Method – Multi-criteria mapping (MCM)

- Used MCM because it allows users to define both criteria of success, and give uncertainty ranges scores, unlike other MCDA methods

- Sampling frame:
  - Focus on DNOs, NESO and Ofgem
  - Only interviewed people whose job covers some aspect of network design (includes forecasting LV demand)
  - Snowball selection but sampling for diversity
  - Target 25 participants – currently collected 13 (9 DNO, 4 NESO)

# What I asked them to do

Options

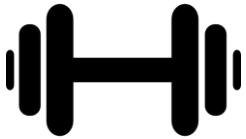


Reinforcement

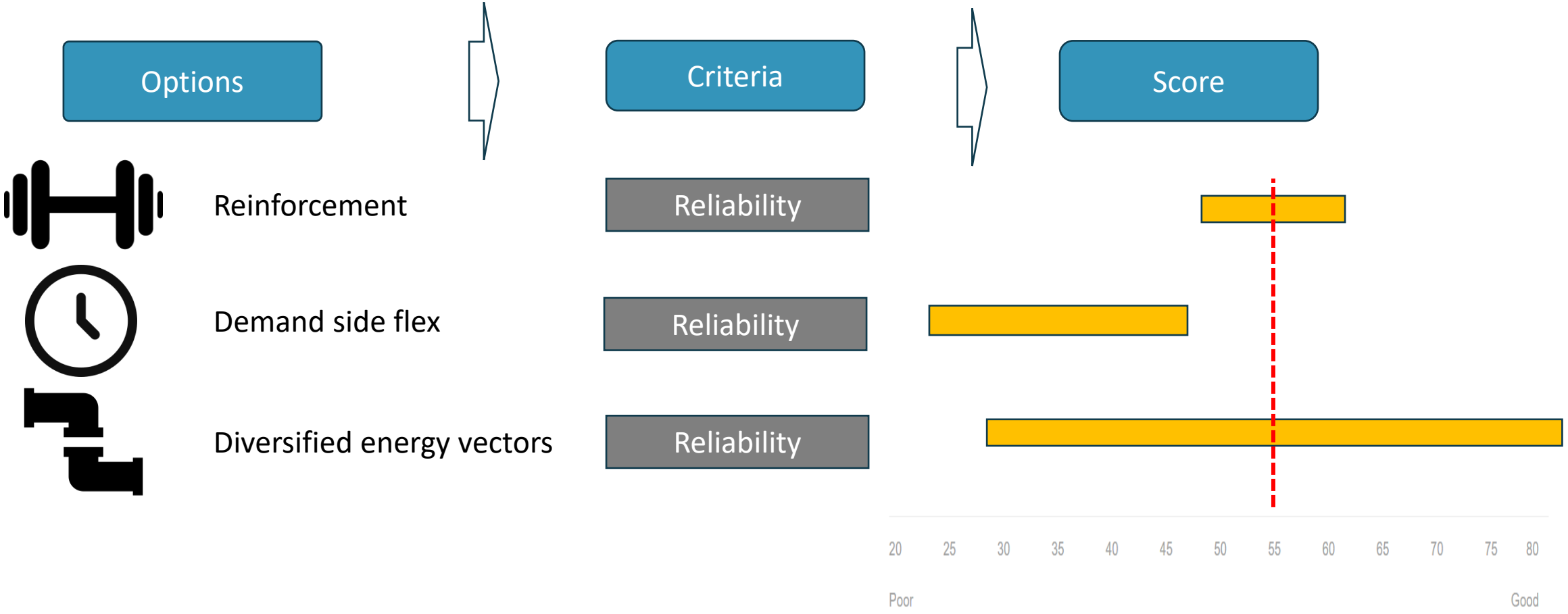
Demand side flex

Diversified energy vectors

# What I asked them to do

| Options | | Criteria | | |
|---|---|---|---|---|
|  | Reinforcement | Reliability | Cost | Timing |
|  | Demand side flex | Reliability | | |
|  | Diversified energy vectors | Reliability | | |

# What I asked them to do



# Results – What does success mean?

## Reliability

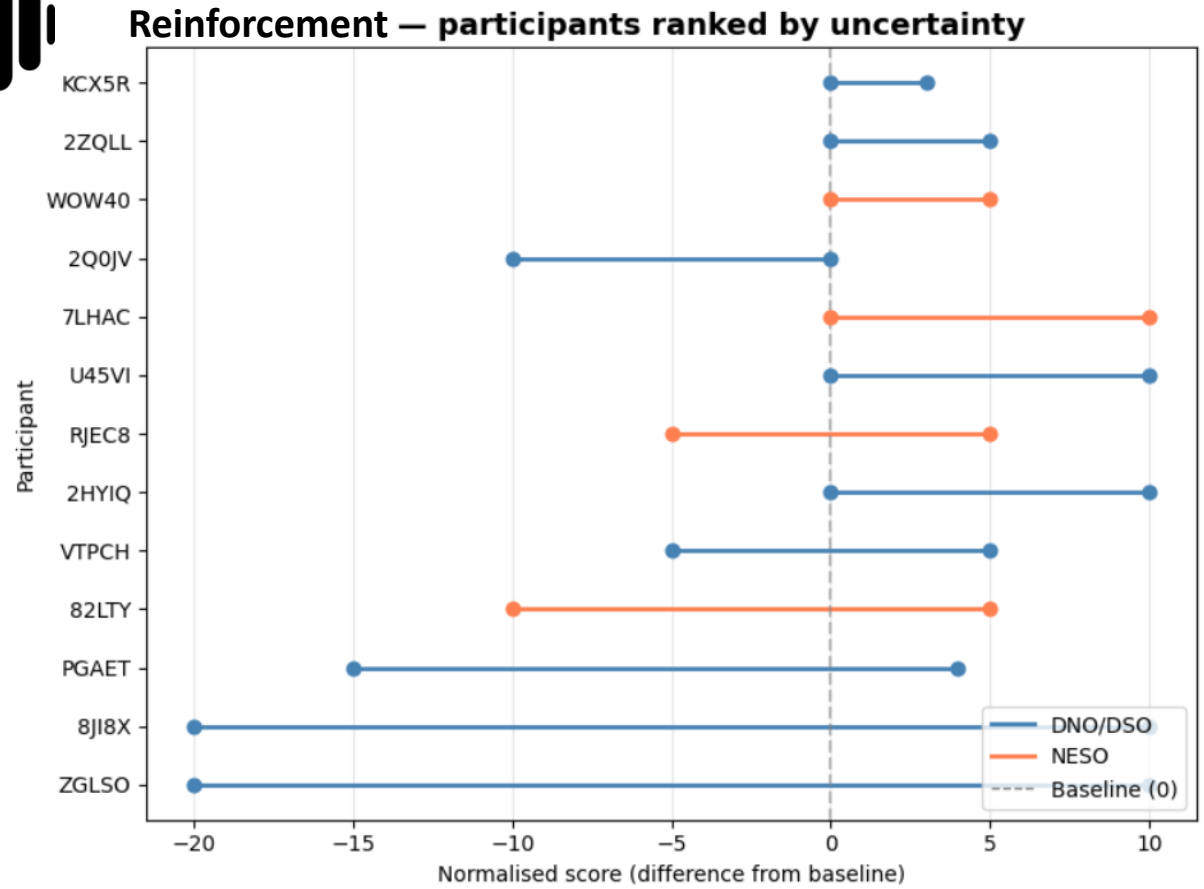
## Cost

£

## Everything else

- Timing/speed/ease of delivery
- Tech readiness/ready for future
- System resilience/confidence
- Sustainability/GHG emissions/Carbon impact
- Community impact/ Acceptability to customers/Feasibility

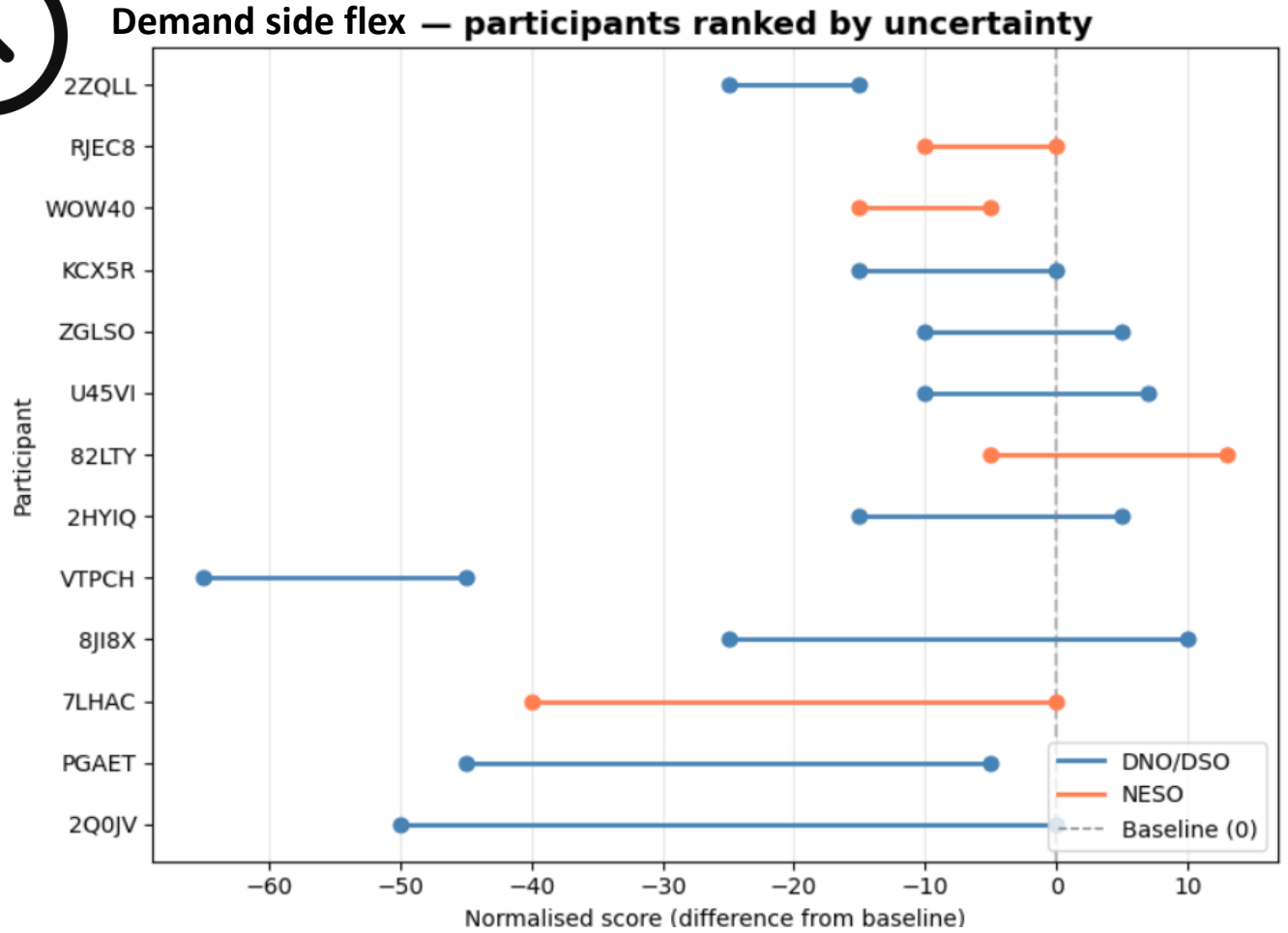
# Results – Uncertainty around reliability




Factors of uncertainty:

- Replacing old kit
- Labour availability
- Demand doesn't grow faster than expected
- Well developed supply chains
- Improved planning processes
- Better visibility of assets

# Results – Uncertainty around reliability




Factors of uncertainty:

- Response doesn't materialise
- Location and constraint don't align
- Customers reactions
- Alignment of signals between national and local

# A few patterns

- **Things can only get better?** – People don't think things will get worse, even in pessimistic case
- **Decarbonisation doesn't always mean success** – All respondents mention LCTs, not many include climate considerations as criteria
- **Weather is not a (big) problem** – Very few mentioned changing weather conditions as factors in pessimistic score for reliability

# Conclusions

Ambiguity between respondents:

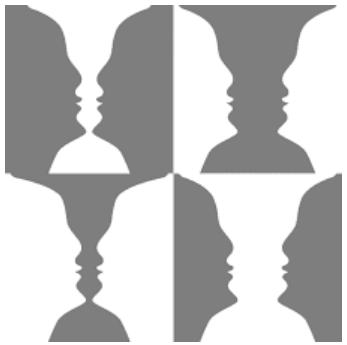
- Strong agreement over most important criteria
- Lots of variation in uncertainty perception

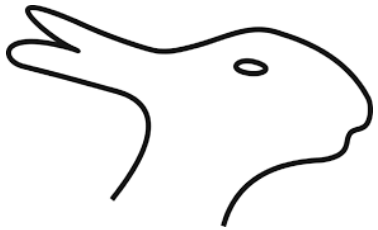
No clear difference between DNO and NESO viewpoint (yet..)

RESP has potential to reduce ambiguity

# Thanks for listening!

## Any questions?



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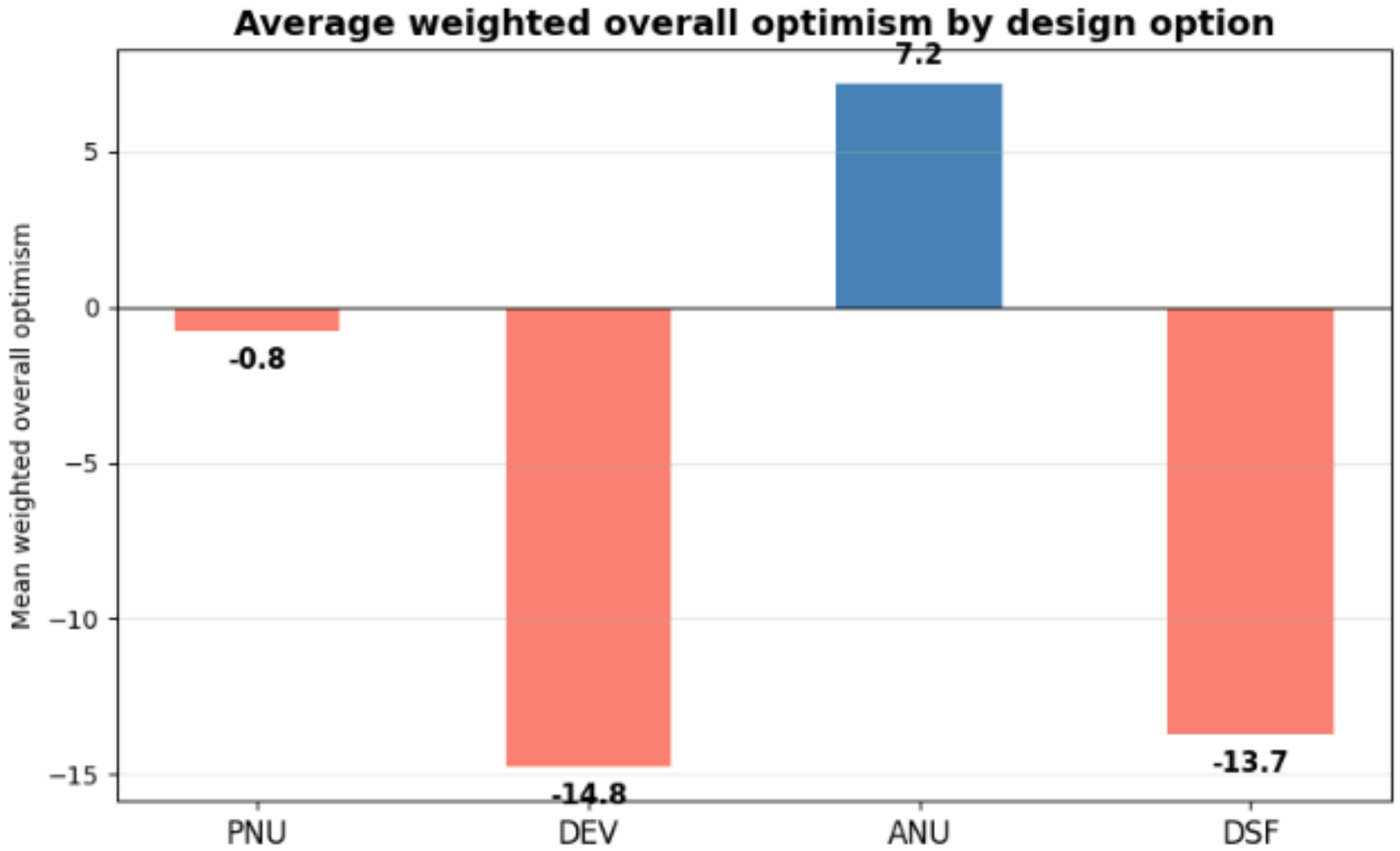
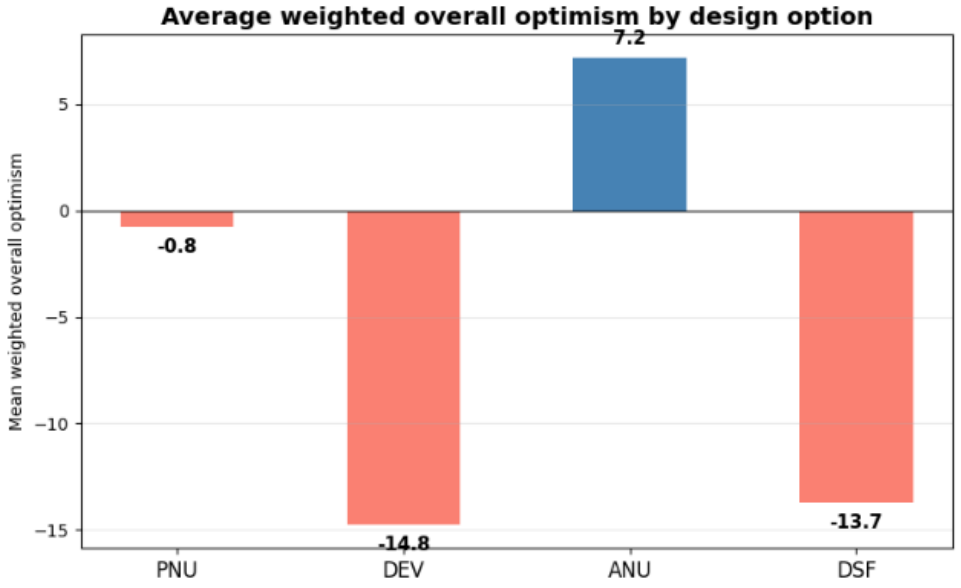
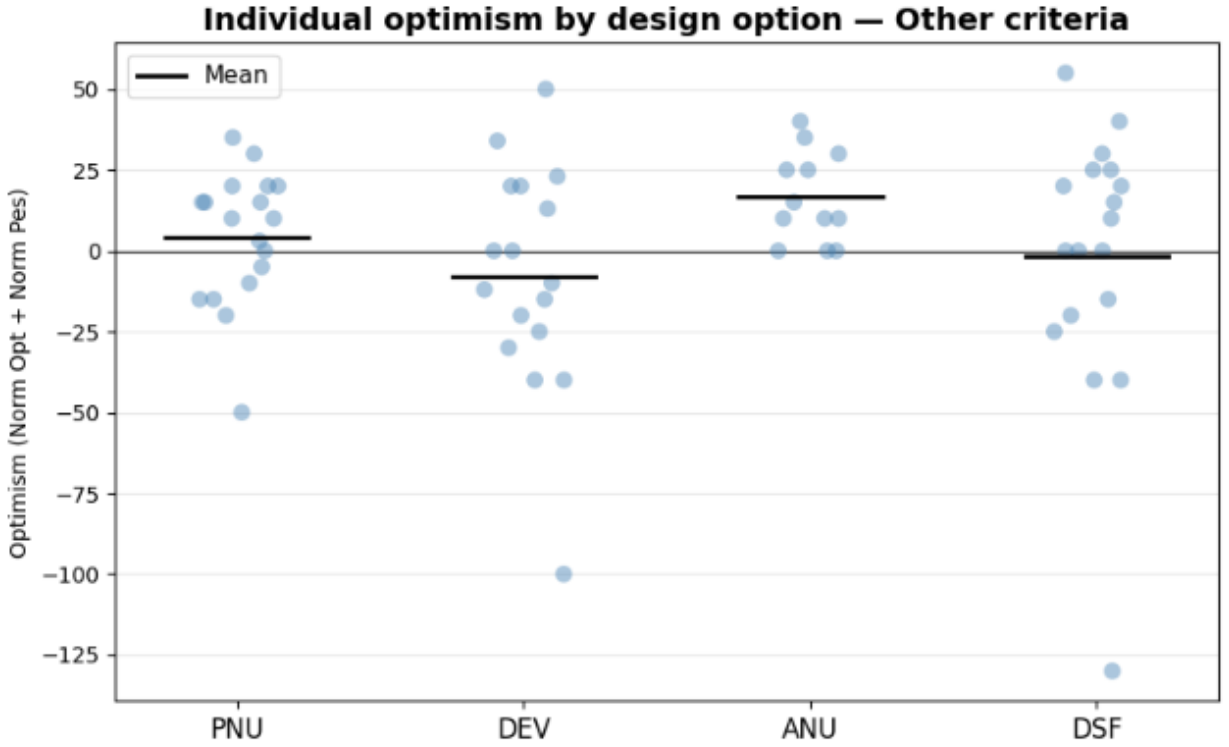
# Results – Optimism

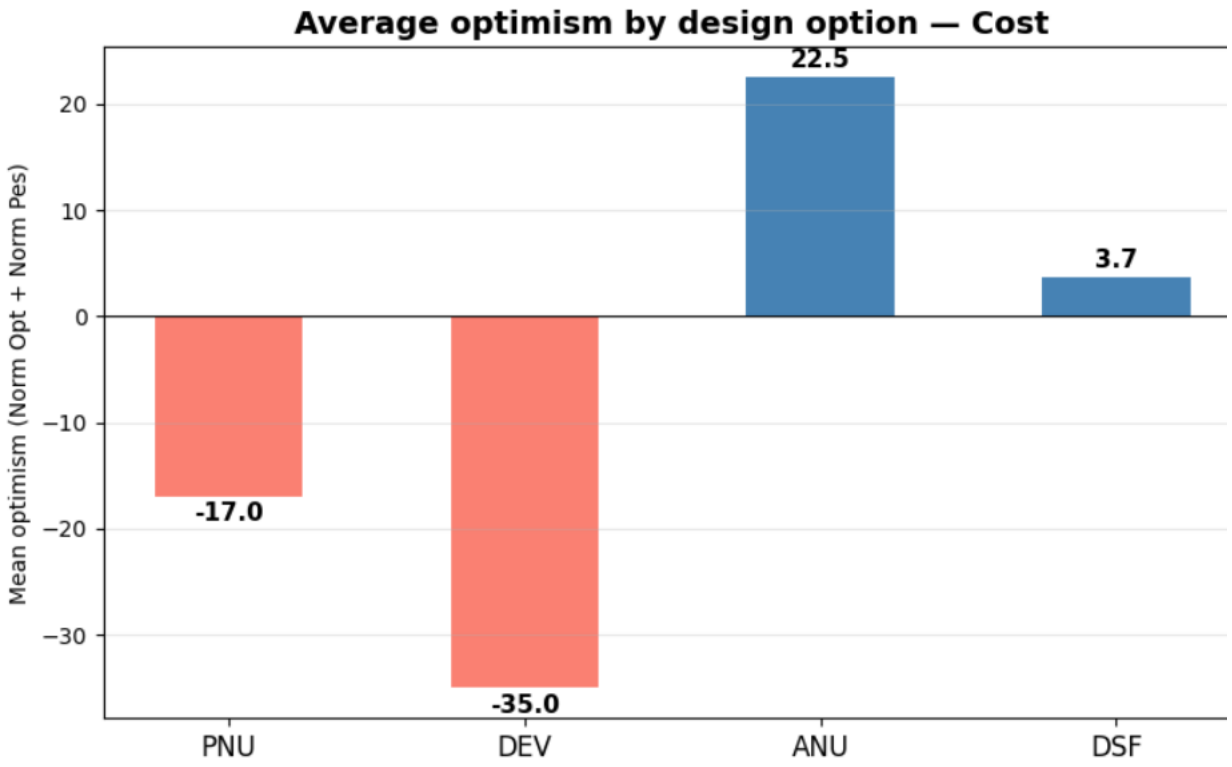


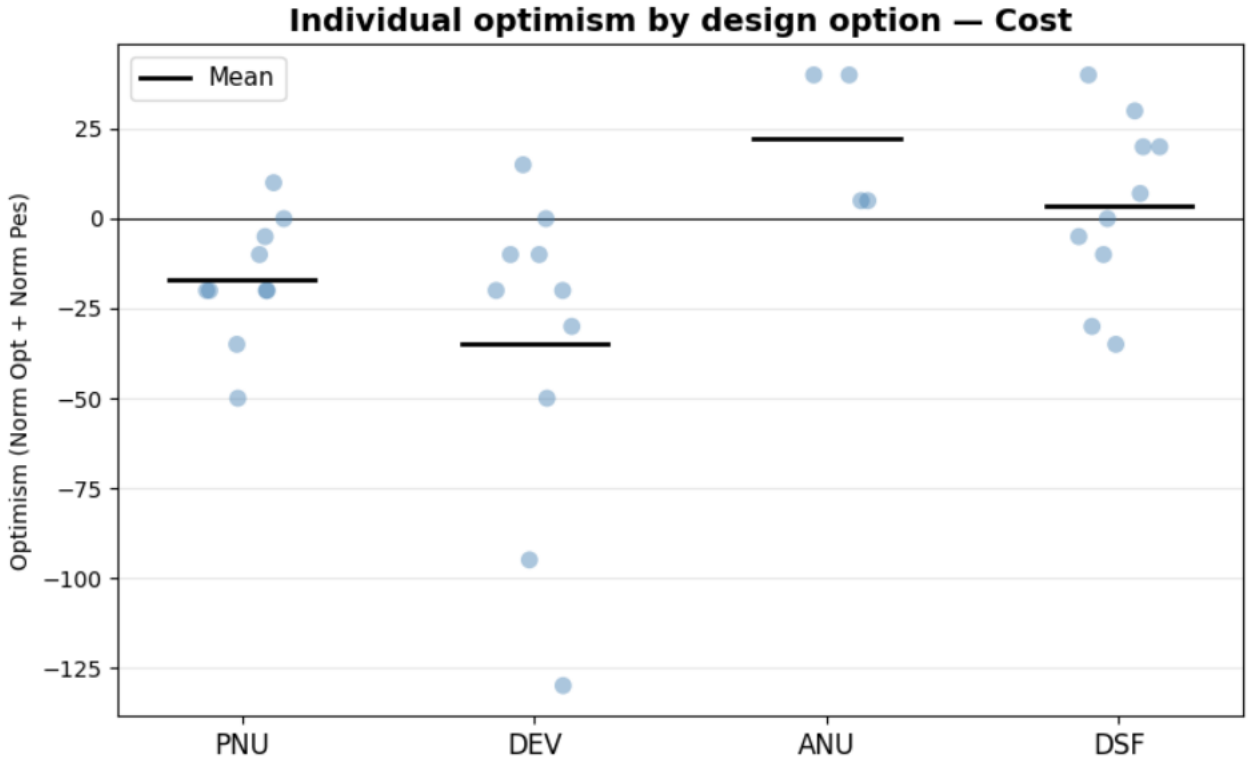
# Results – Optimism



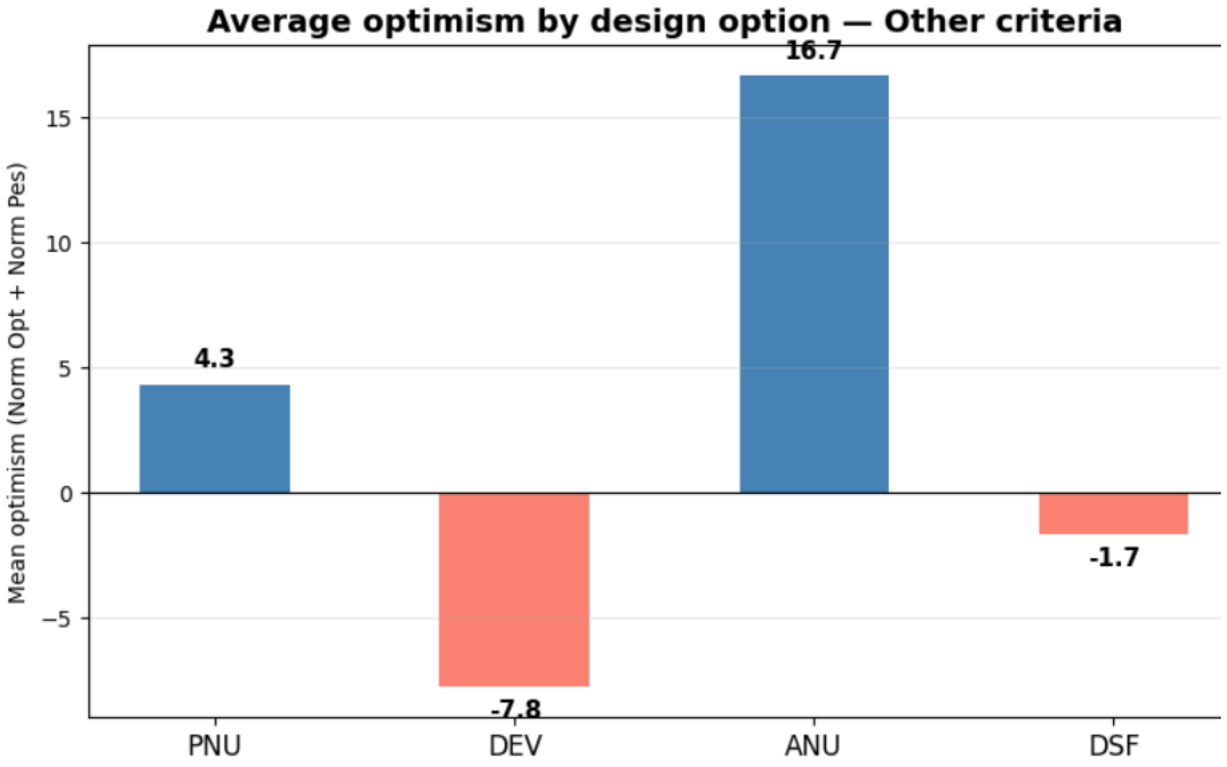



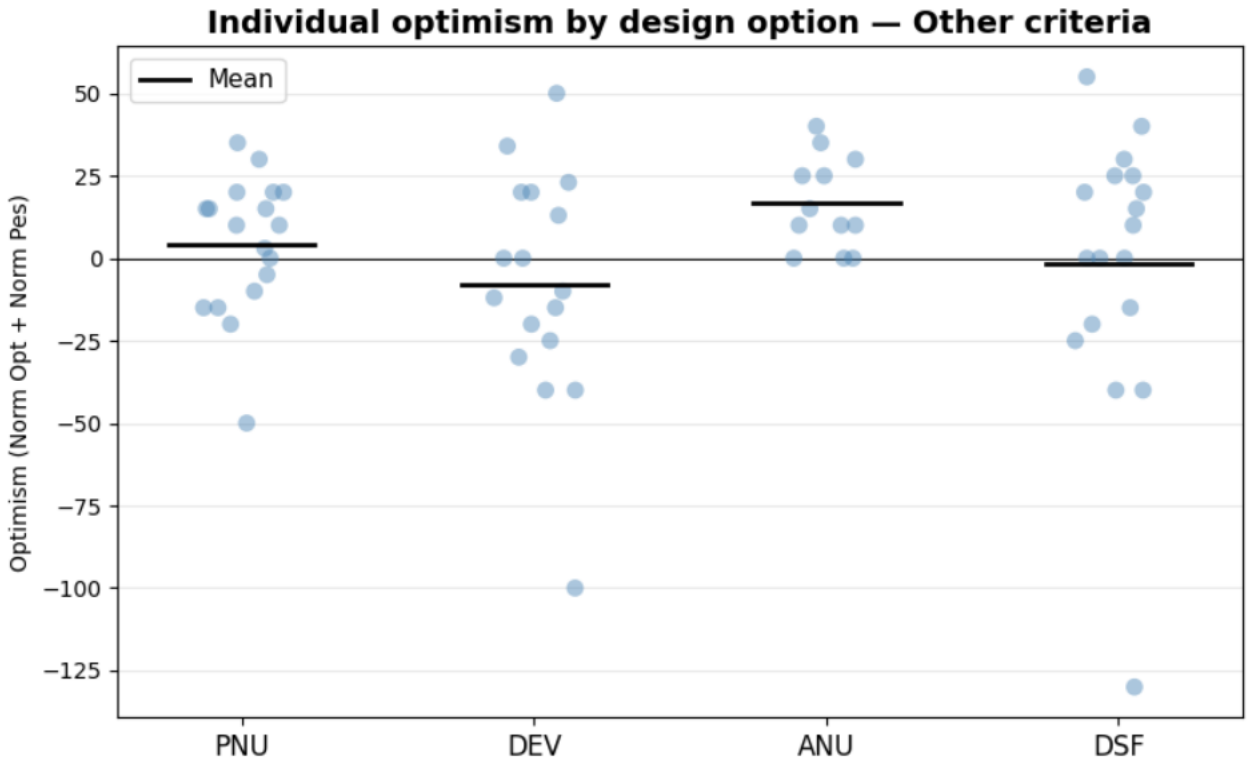
# Results – optimism by cost



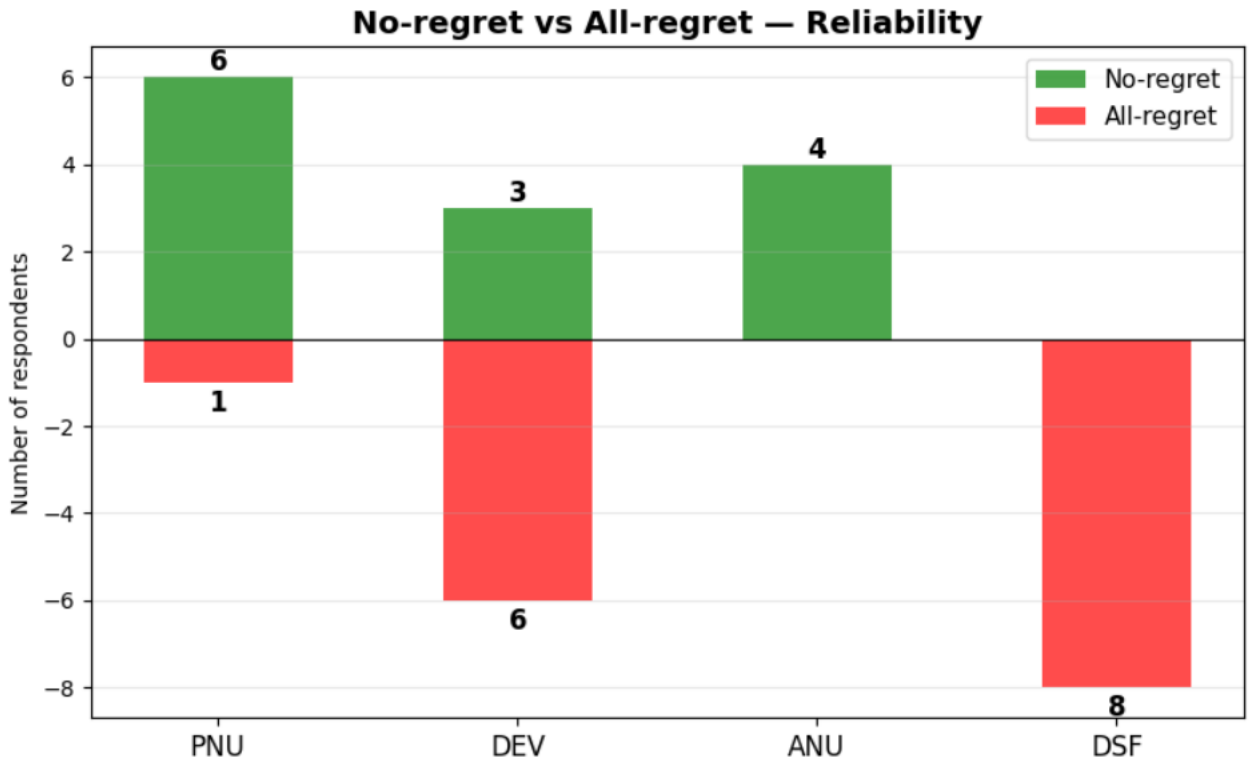



# Results – optimism by ‘other’

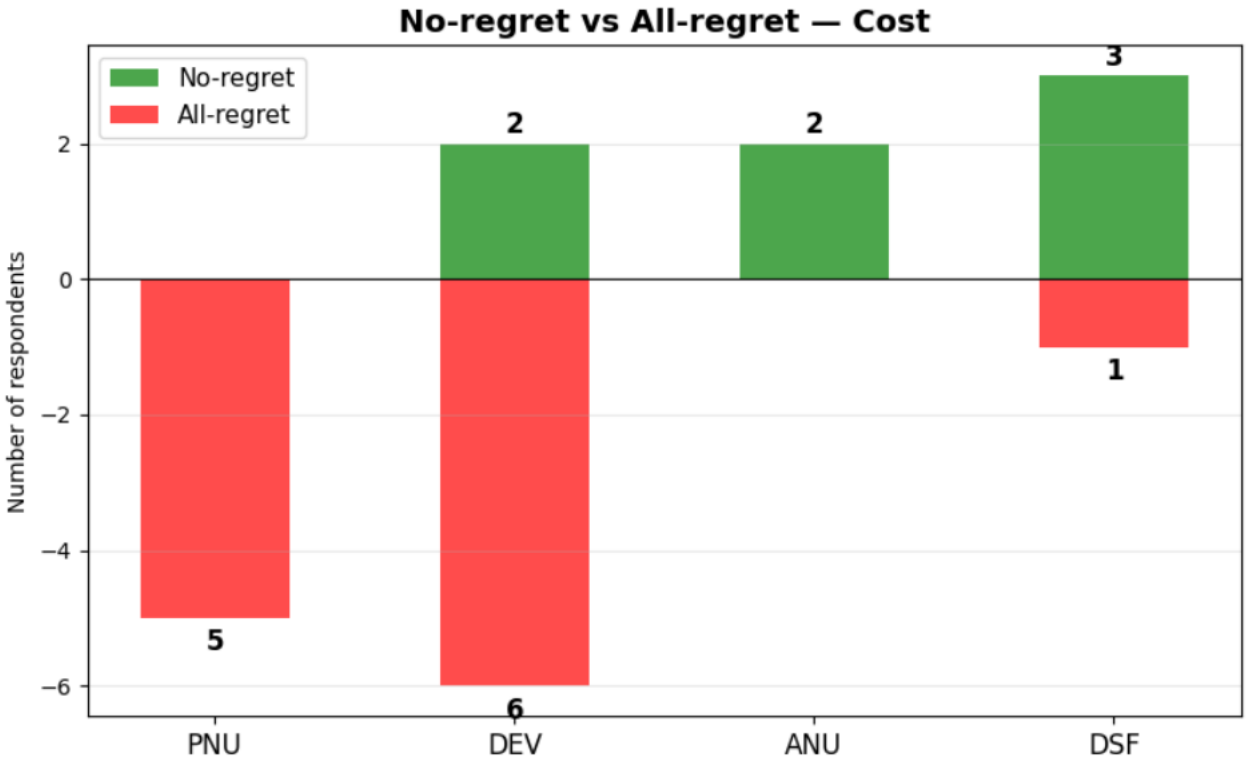


# Results – Extreme takes on reliability



# Results – Extreme takes on cost



# Results – Extreme takes on ‘other’