UQ CHARGE-EV

Round Tables

https://aibe.uq.edu.au/research/energy/electric-vehicle

Acknowledgement of Country

- The University of Queensland (UQ) acknowledges the Traditional Owners and their custodianship of the lands on which we meet.
- We pay our respects to their Ancestors and their descendants, who continue cultural and spiritual connections to Country.
- We recognise their valuable contributions to Australian and global society.

https://aibe.uq.edu.au/research/energy/electric-vehicle

Image: Digital reproduction of *A guidance through time* by Casey Coolwell and Kyra Mancktelow

Project Team

Dr Andrea La Nauze

Prof Flavio Menezes

Dr Kai Li Lim

Prof. Lionel Page

Assoc. Prof. Lana Friesen

Thara Philip

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What	Who
Welcome and acknowledgement of country	Dr Andrea La Nauze
Summary of big picture objectives	Professor Flavio Menezes
Teslascope	Thara Philip & Dr Kai Li Lim
Randomisation	Associate Professor Lana Friesen
Survey results and proposed tariff design	Dr Andrea La Nauze
Feedback and Q&A	Participants

Big Picture

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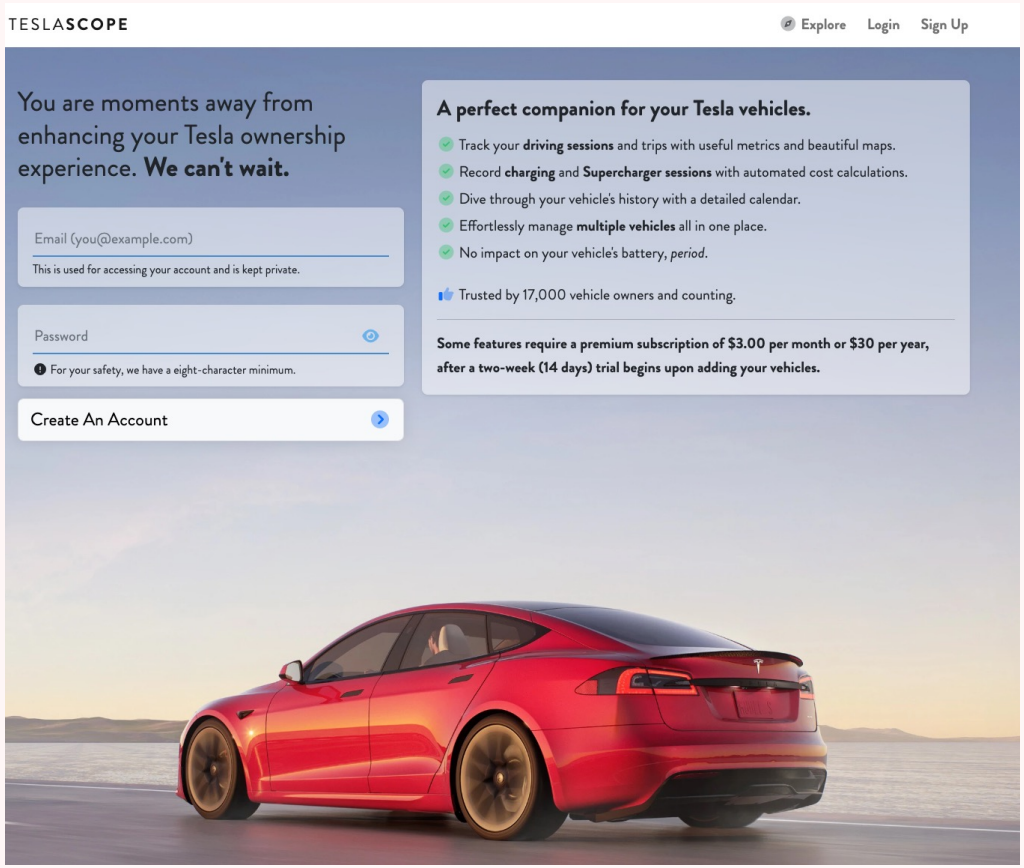
Teslascope



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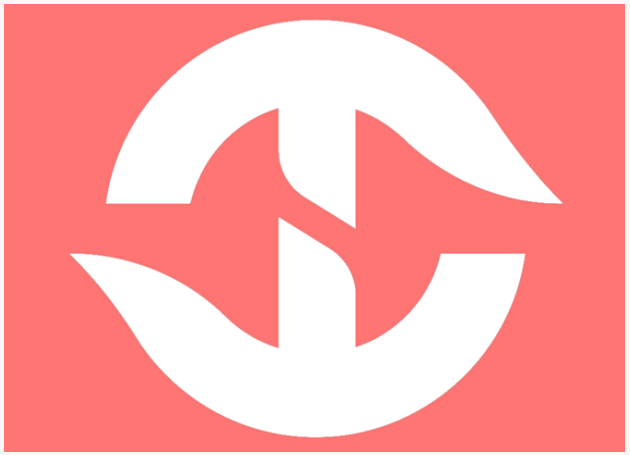
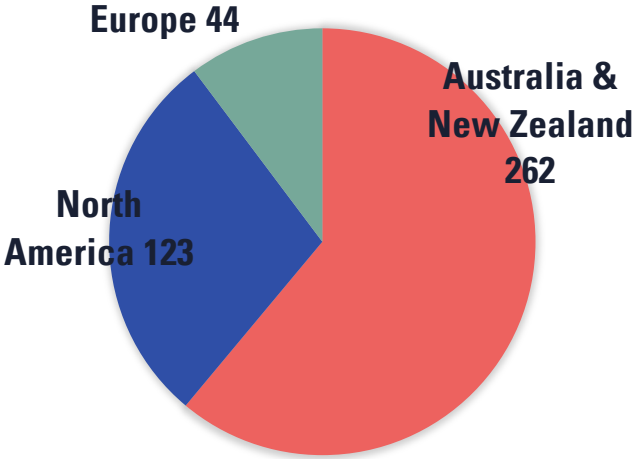
Background

- Project initially launched in November 2021
- Research gap: Limited information on real electric vehicle driving and charging
- Cost-effective, time-bound approach
- Partner with data analytics platform , Teslascope
- Teslascope is a US-based firm providing telematics/data analytics services to Tesla owners worldwide.



Insights Report 1 : Data Highlights

	Data Highlights
377	Days
Nov 2021- Nov 2022	Date range
200,337	Number of driving events
2,949,895	Kilometres driven
69,579	Number of charging events
9,359	Number of fast charging events
977,168	Energy consumption (kWh)



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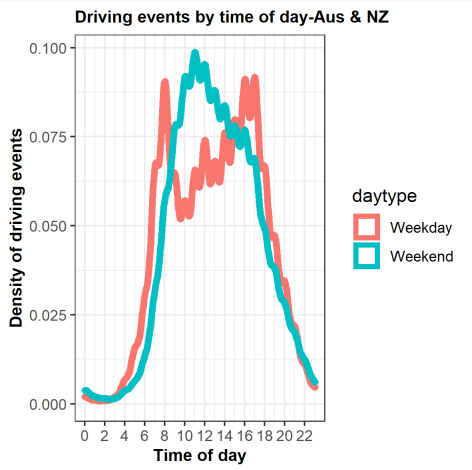
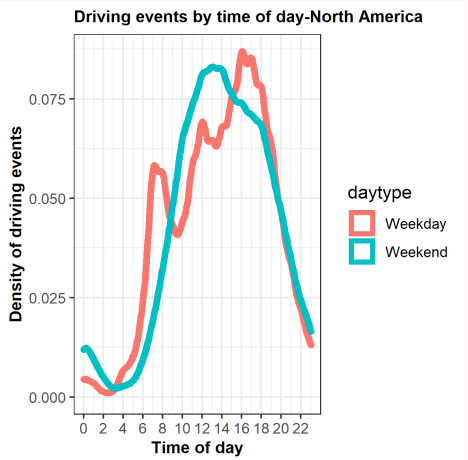
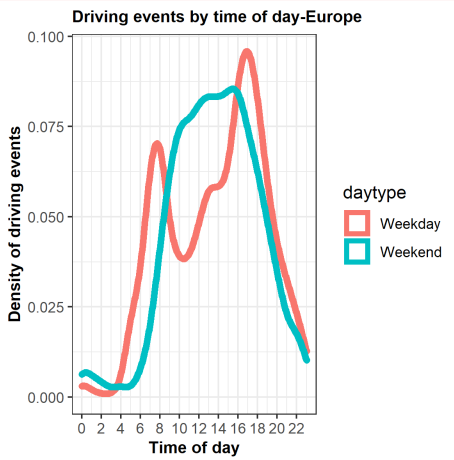
Driving Patterns







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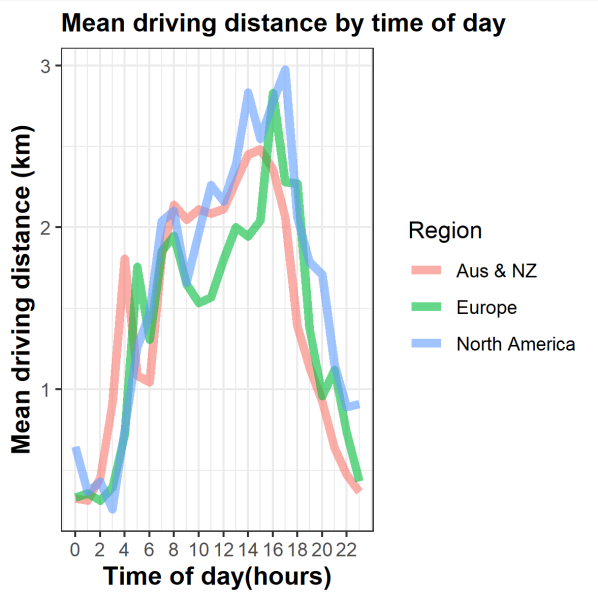
Driving Distances



Region	Mean daily distance (km)
Australia & New Zealand	30.25
North America	34.89
Europe	29.33

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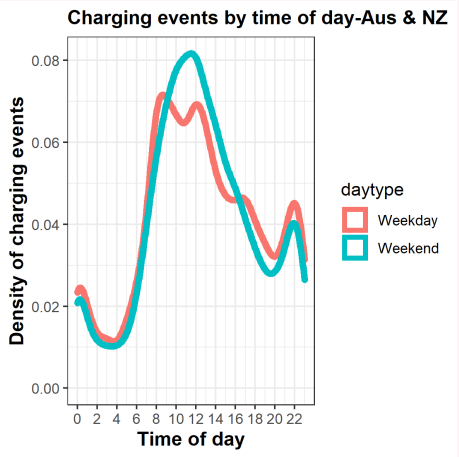
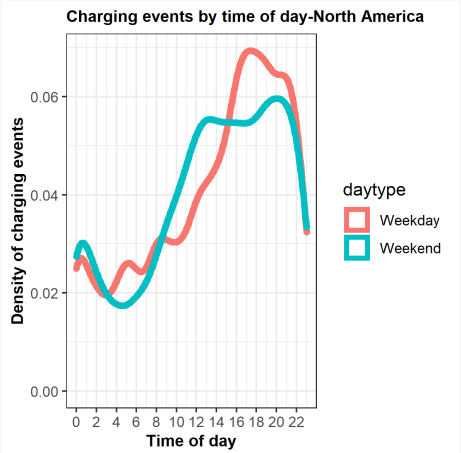
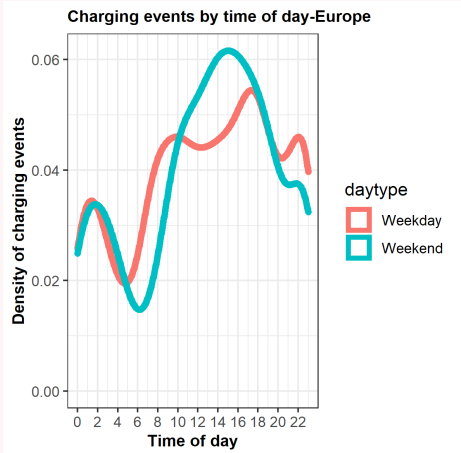
Charging Events







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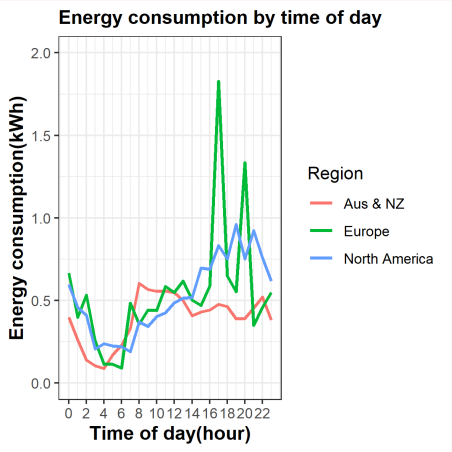
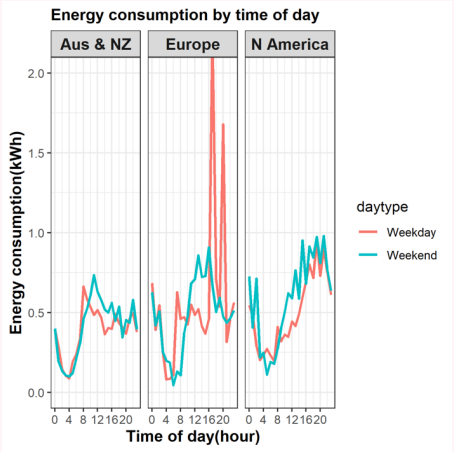
Energy Consumption





Region	Mean daily energy consumption (kWh)
Australia & New Zealand	9.59
North America	12.79
Europe	12.96

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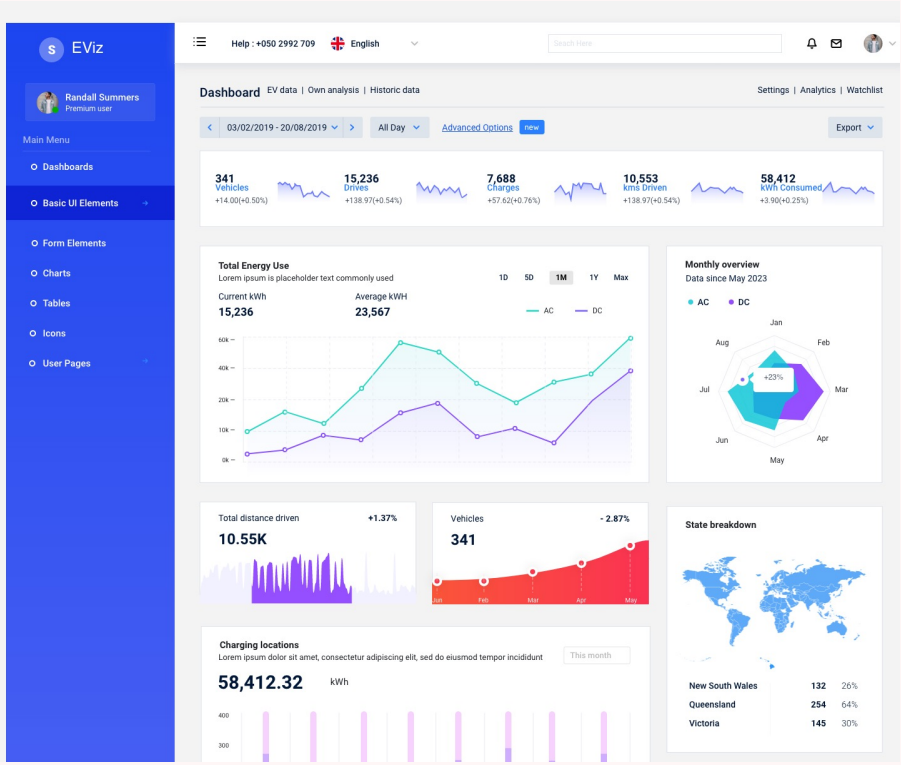
Data Dashboard – EViz



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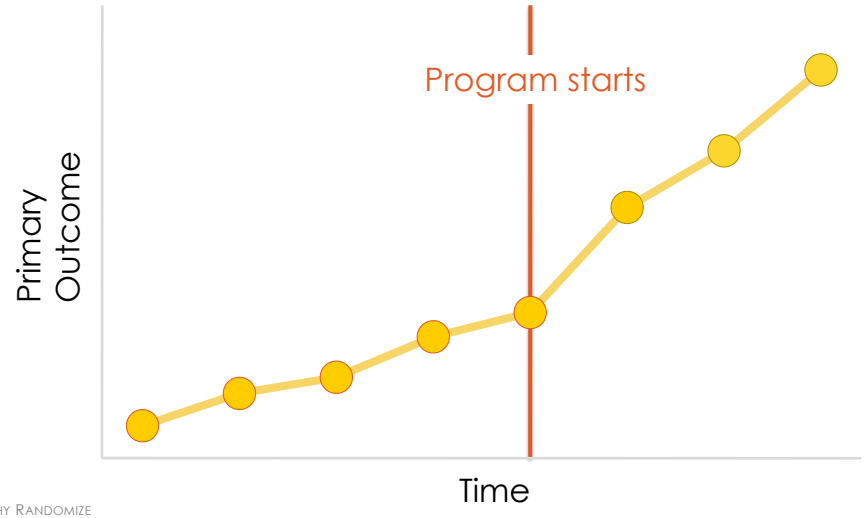
Randomisation

What is the impact of this program?



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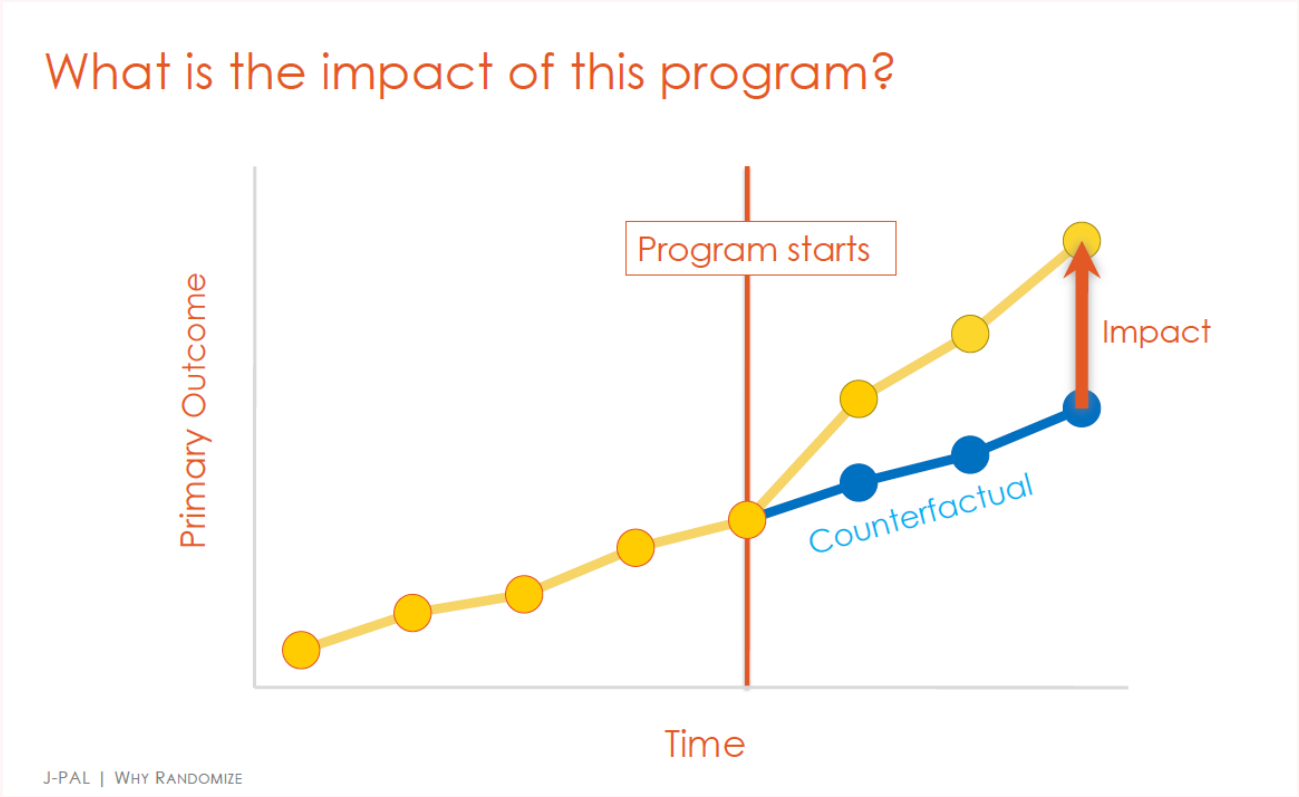

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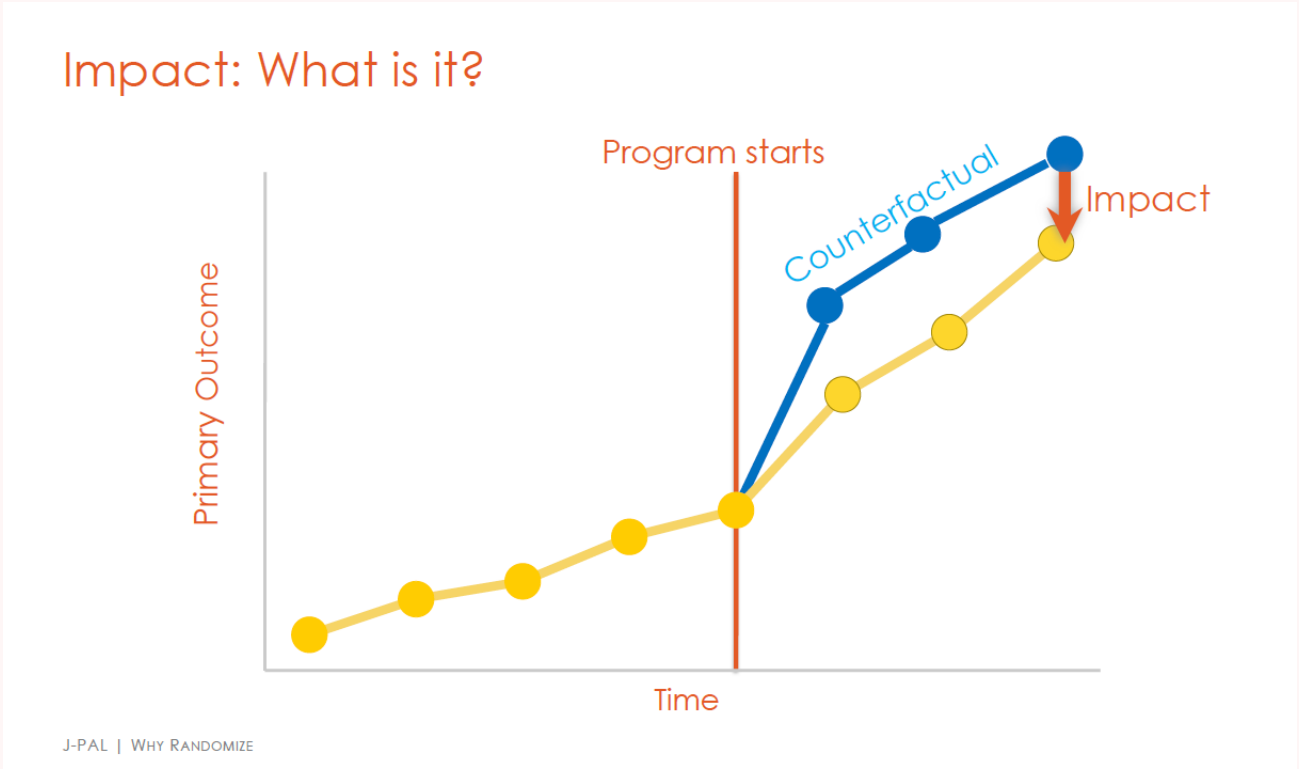
How to measure impact?

Impact is defined as a comparison between:

1. the outcome some time after the program has been introduced (the *"factual"*)

2. the outcome at that same point in time had the program not been introduced (the *"counterfactual"*)



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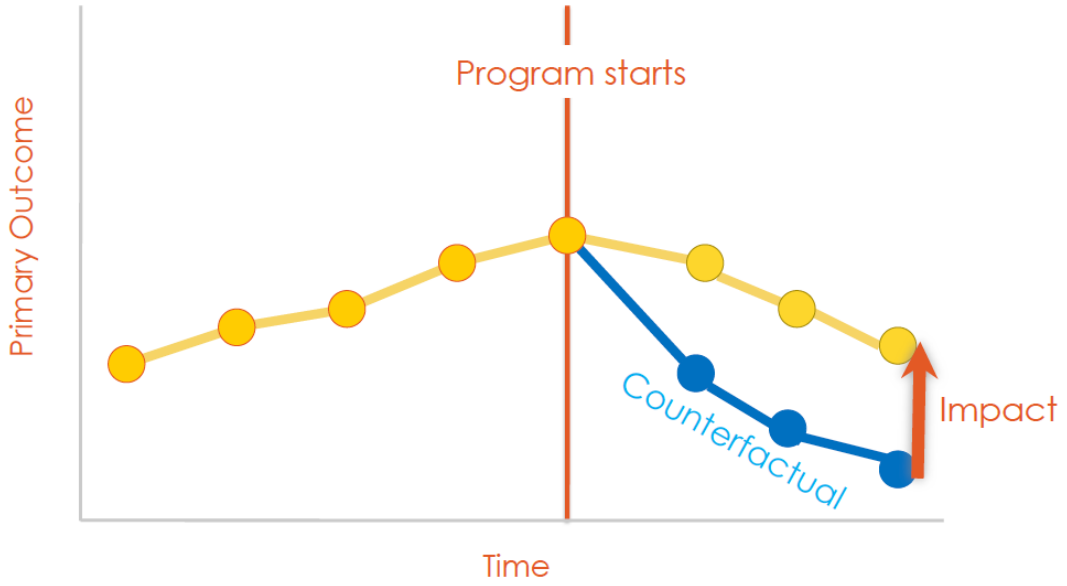
Impact: What is it?



J-PAL | WHY RANDOMIZE

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Counterfactual

The ***counterfactual*** represents the state of the world that program participants would have experienced in the absence of the program

Problem: Counterfactual cannot be observed

Solution: We need to "mimic" or construct the counterfactual

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Constructing the counterfactual

- Usually done by selecting a group of individuals that ***did not*** participate in the program
- This group is usually referred to as the ***control group*** or ***comparison group***
- How this group is selected is a **key decision** in the design of any impact evaluation

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Selecting the comparison group

- Idea: Comparability

Treatment

Comparison

- Goal: Attribution

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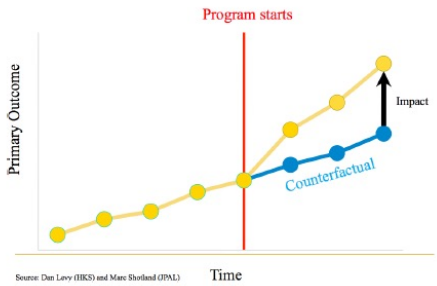
3 Key Ideas about Impact

1 - Counterfactual



2 – Comparison group mimics the counterfactual

Treatment

Comparison

3 - Goal of Impact Evaluations: Attribution

The basics

Start with simple case:

- Take a sample of program applicants
- Assign them to either:
  - *Randomly* as Treatment Group – are offered treatment
  - Control Group – are not offered the treatment (during the evaluation period)

Key advantage of randomized evaluations

Because members of the groups (treatment and control) do not differ systematically at the outset of the evaluation,

any difference that subsequently arises between them can be attributed to program rather than to other factors.

Treatment

Comparison

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References, Reuse, and Citation

Survey Insights

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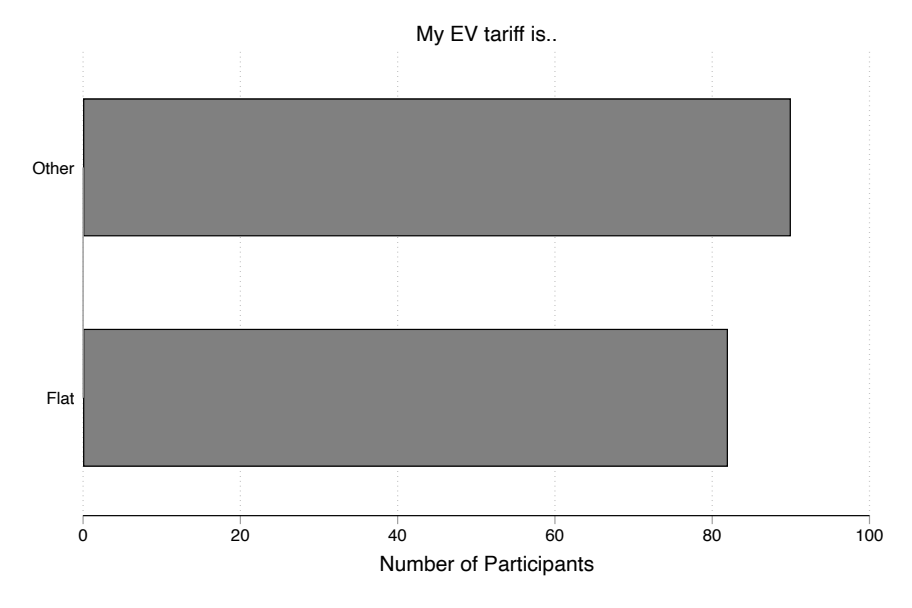
Current Tariffs



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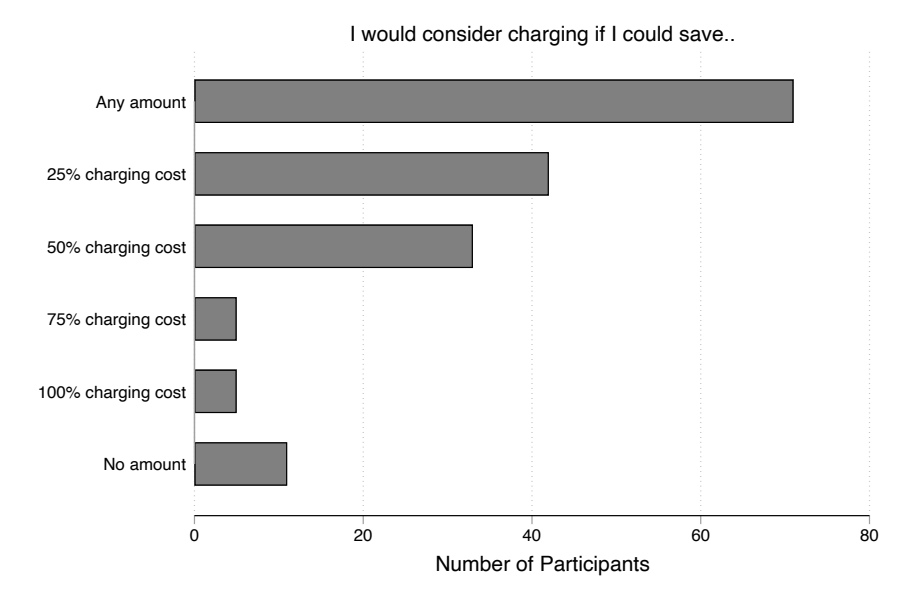
Likelihood of Shifting



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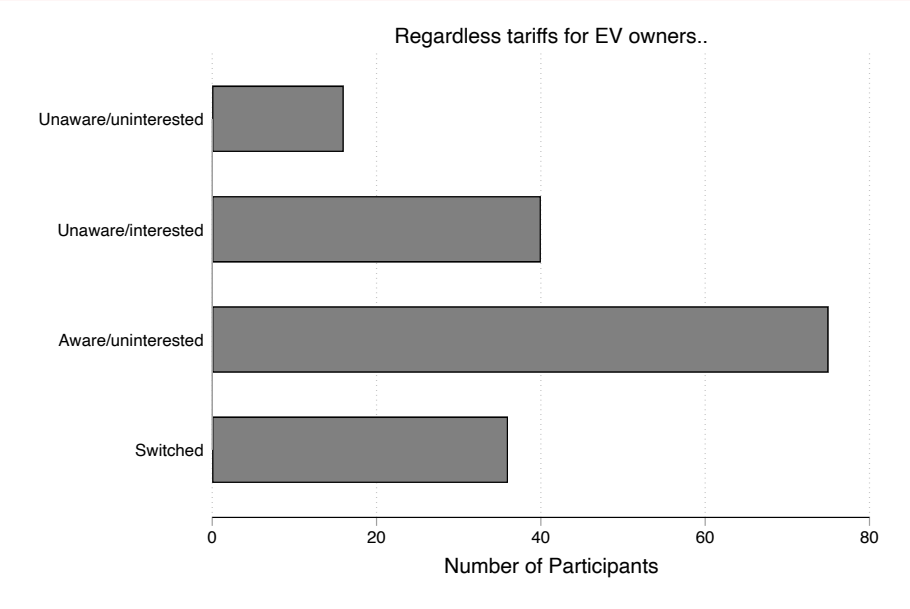
Interest in EV tariffs



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Proposed Trial

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Proposed Trial - Groups

Non Solar Participants	
100 Control	100 Treatment

Solar Participants	
100 Control	100 Treatment

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Proposed Trial - Incentives

Time	Incentive	Solar	Non Solar
Sun soak	20c/kWh for charge exceeding baseline	N	Y
Peak reduction	20c/kWh for charge below baseline	Y	Y

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Proposed Trial – Length

Trial length	
Minimum 3 months	Maximum 6 months

Proposed Trial – Timing

Trial timing	
June/July	Nov/Dec

Communicating Results

Stakeholder Events	
Industry Workshop	Dec 2023
Public Webinar	Dec 2023
Project Report	Dec 2023

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Ways to Support our Research

- Share the website on social media
- Promote to customers/stakeholders through your organisation
- Post your thoughts on the preliminary report on social media
- Talk with EV owners about the project
- Let us know if you have any other ideas on how to get EV owners involved

Scan here for our webpage

This project is funded by Energy Consumers Australia's Grants Program.

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