

ENERGY COST INFORMATION AND ELECTRIC VEHICLE PURCHASE DECISIONS – PRELIMINARY RESULTS FROM A LARGE-SCALE RANDOMIZED CONTROLLED TRIAL

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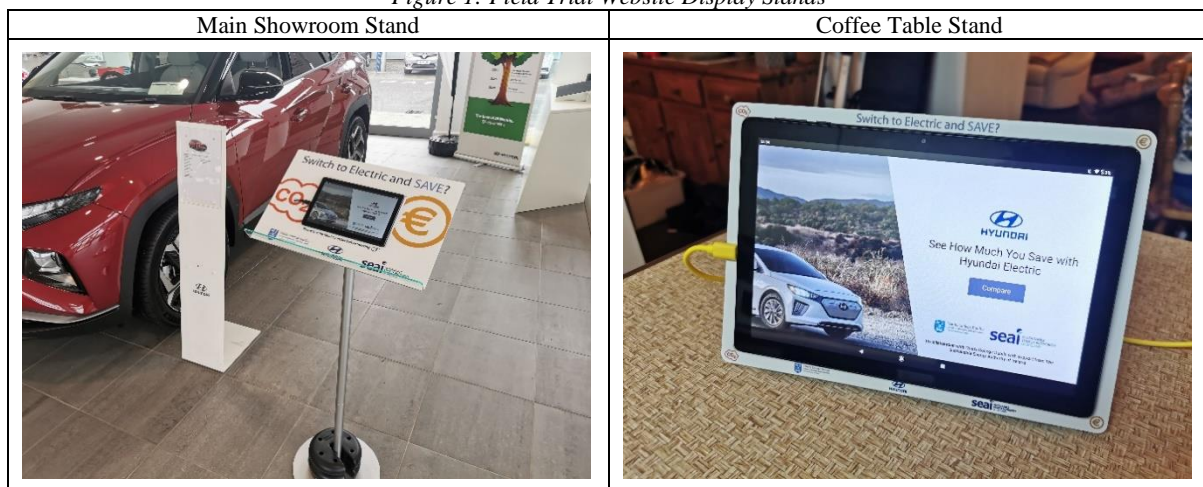
Overview

Inattention to, or a failure to take into account future energy costs is often cited as a major barrier to scaling up electric vehicle (EV) uptake (Gillingham et al., 2021; Andor et al., 2020; Allcott & Knittel, 2019; Turrentine & Kurani, 2007). This paper presents preliminary results from a large-scale randomized controlled trial (RCT) which tests the provision of energy cost information to prospective car buyers at the point of sale. Information on future energy use costs and carbon emissions is provided via an interactive app and dedicated displays installed in treated showrooms. While we observe significant overall growth in EV sales over the period, preliminary findings do not suggest an immediate response to treatment. We supplement findings from the trial with qualitative data from in-depth interviews of sales staff to gain a deeper understanding into consumer vehicle purchase processes.

Methods

We conduct a large-scale RCT in partnership with a popular automaker brand in the Republic of Ireland by presenting future energy cost and CO₂ emissions information to consumers via a mobile app at the point of vehicle sale. Treatment is randomized across half of the brand's showrooms (Figure 2) and is delivered via dedicated displays installed in treated showrooms (Figure 1). Outcome is measured using vehicle model-level monthly sales data controlling for multiple vehicle characteristics. We also conduct semi-structured interviews with sales staff at the end of the trial in order to gather further qualitative data on consumer vehicle purchase decisions.

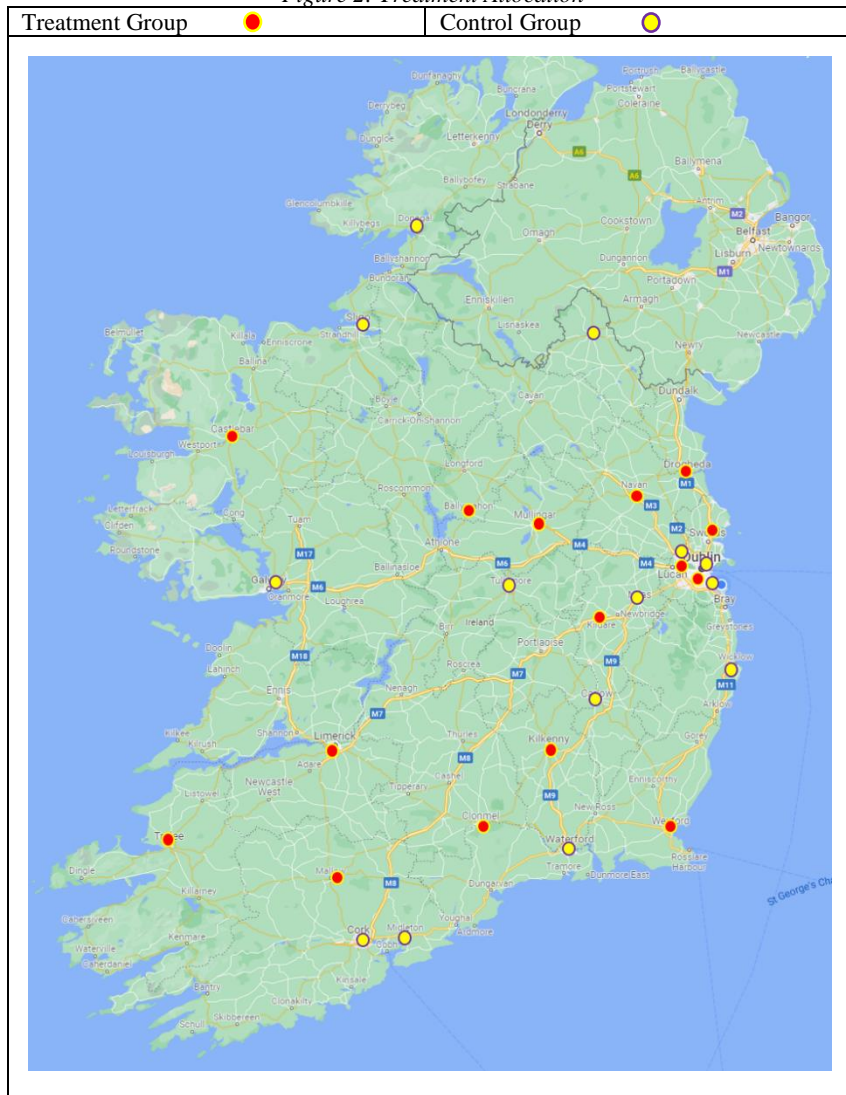
Figure 1: Field Trial Website Display Stands



Results

Preliminary results do not indicate an immediate response to treatment in terms of increased purchases of more energy efficient or less polluting vehicles. The researchers are however awaiting further data to explore longer-term or delayed effects of intervention. Results from the in-depth interviews point to several important considerations when presenting energy cost information to consumers. According to sales staff, the decision to switch from an ICE to an EV drivetrain is a significant one for most households, which can take a significant amount of time (4 weeks to 6 months) and involves considerable independent research on the part of the consumer. Most of the research appears to be conducted online through various sources such as manufacturer websites, social media platforms, video platforms (such as YouTube) and WhatsApp groups. In addition, online discussion forums appear to be an increasingly important source of information which may be seen as impartial/objective by potential customers. Some sales staff report that they visit such forums to anticipate questions that will be asked by customers in store. Sales staff interviews also point to several other additional factors that need to be considered when presenting energy cost information to consumers, such as the demographics of new car purchasers, their location, tenure status and the timing of information delivery.

Figure 2: Treatment Allocation



Conclusions

This paper presents early findings from a large-scale RCT which aims to provide energy cost information to consumers at the point of vehicle sale. Preliminary findings do not indicate an immediate response to treatment. However, there are several limitations to the generalizability of these findings due to external factors, such as COVID-19 pandemic and subsequent global energy crisis. Findings from in-depth interviews indicate that the decision to switch from and an ICE to an EV drivetrain is a significant one for most households and involves a significant amount of independent research. Online sources of information are becoming increasingly important in influencing vehicle purchase decisions, and several other factors such as vehicle purchaser demographics, location, and timing of information delivery will be important in communicating energy cost savings and carbon emissions reductions associated with EV drivetrains.

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