

Reporting Summary

Nature Research wishes to improve the reproducibility of the work that we publish. This form provides structure for consistency and transparency in reporting. For further information on Nature Research policies, see [Authors & Referees](#) and the [Editorial Policy Checklist](#).

Statistics

For all statistical analyses, confirm that the following items are present in the figure legend, table legend, main text, or Methods section.

n/a Confirmed

- ☐ ☒ The exact sample size (n) for each experimental group/condition, given as a discrete number and unit of measurement
- ☒ ☐ A statement on whether measurements were taken from distinct samples or whether the same sample was measured repeatedly
- ☐ ☒ The statistical test(s) used AND whether they are one- or two-sided
Only common tests should be described solely by name; describe more complex techniques in the Methods section.
- ☒ ☐ A description of all covariates tested
- ☒ ☐ A description of any assumptions or corrections, such as tests of normality and adjustment for multiple comparisons
- ☐ ☒ A full description of the statistical parameters including central tendency (e.g. means) or other basic estimates (e.g. regression coefficient) AND variation (e.g. standard deviation) or associated estimates of uncertainty (e.g. confidence intervals)
- ☒ ☐ For null hypothesis testing, the test statistic (e.g. F , t , r) with confidence intervals, effect sizes, degrees of freedom and P value noted
Give P values as exact values whenever suitable.
- ☒ ☐ For Bayesian analysis, information on the choice of priors and Markov chain Monte Carlo settings
- ☒ ☐ For hierarchical and complex designs, identification of the appropriate level for tests and full reporting of outcomes
- ☒ ☐ Estimates of effect sizes (e.g. Cohen's d , Pearson's r), indicating how they were calculated

Our web collection on [statistics for biologists](#) contains articles on many of the points above.

Software and code

Policy information about [availability of computer code](#)

Data collection

No software was used in the data collection effort, data was provided from various providers

Data analysis

The software used for the analysis in this study was R, version 3.6.0 ("Planting of a Tree")

For manuscripts utilizing custom algorithms or software that are central to the research but not yet described in published literature, software must be made available to editors/reviewers. We strongly encourage code deposition in a community repository (e.g. GitHub). See the Nature Research [guidelines for submitting code & software](#) for further information.

Data

Policy information about [availability of data](#)

All manuscripts must include a [data availability statement](#). This statement should provide the following information, where applicable:

- Accession codes, unique identifiers, or web links for publicly available datasets
- A list of figures that have associated raw data
- A description of any restrictions on data availability

The only dataset used within this study that is publicly available is the California Household Transportation Survey (<https://www.nrel.gov/transportation/secure-transportation-data/tsdc-california-travel-survey.html>). All other datasets are strictly confidential and are unable to be shared publicly (Plug-in Hybrid & Electric Vehicle Center annual surveys, Chargepoint and EVGo charging session data, and Uber and Lyft trip data). All figures in the report are generated from the aforementioned raw datasets.

Field-specific reporting

Please select the one below that is the best fit for your research. If you are not sure, read the appropriate sections before making your selection.

☐ Life sciences ☒ Behavioural & social sciences ☐ Ecological, evolutionary & environmental sciences

For a reference copy of the document with all sections, see [nature.com/documents/nr-reporting-summary-flat.pdf](https://www.nature.com/documents/nr-reporting-summary-flat.pdf)

Behavioural & social sciences study design

All studies must disclose on these points even when the disclosure is negative.

Study description	Quantitative study based on a combination of survey respondents, population data (electric vehicles in Uber/Lyft), and sample data (gas cars in Uber/Lyft).
Research sample	Several research samples/populations were used in this study: -California Household Travel Survey (CHTS): random selection of households in California. Provided with weights to make the data representative on the basis of demographic characteristics including age, gender, education, and race. -Plug-in Hybrid & Electric Vehicle panel survey: convenience sample of plug-in electric vehicle owners in California, these respondents were recipients of the California Clean Vehicle Rebate after purchasing an electric vehicle. The dataset is assumed to represent characteristics of electric vehicle owners in California though there are likely some bias due to the convenience sampling (though this reflects a minute portion of the study). -Charging data: Population data (all non-Tesla, public DC fast charging events) which will be representative of the charging behavior of non-Tesla EV owners in California. Also provides a the population data of charging events for users of the electric vehicles under the Maven program (rental of EVs for Lyft and Uber services). -Trip data: Population data for EVs (all EV trips for Lyft) and sample data (5000 vehicles) for gasoline vehicles. The gasoline vehicles were provided by Lyft such that they represented their fleet fuel efficiency and travel behavior (number of trips and daily distance traveled).
Sampling strategy	See note above
Data collection	We did not collect our own data, all data was obtained from third-parties.
Timing	-CHTS: 2010-2012 -PH&EV Survey: 2010-2017 -Charging data (EVGo and Chargepoint): 2014-2018 -Trip data (Lyft and Uber): 2017-2018
Data exclusions	No data were excluded
Non-participation	N/A
Randomization	N/A

Reporting for specific materials, systems and methods

We require information from authors about some types of materials, experimental systems and methods used in many studies. Here, indicate whether each material, system or method listed is relevant to your study. If you are not sure if a list item applies to your research, read the appropriate section before selecting a response.

Materials & experimental systems

Methods

- | n/a | Involved in the study |
|-------------------------------------|--|
| ☒ | ☐ Antibodies |
| ☒ | ☐ Eukaryotic cell lines |
| ☒ | ☐ Palaeontology |
| ☒ | ☐ Animals and other organisms |
| ☒ | ☐ Human research participants |
| ☒ | ☐ Clinical data |

- | n/a | Involved in the study |
|-------------------------------------|---|
| ☒ | ☐ ChIP-seq |
| ☒ | ☐ Flow cytometry |
| ☒ | ☐ MRI-based neuroimaging |