

Plan Overview

A Data Management Plan created using DMP Tool

Title: Assessing Transportation Equity in California ZEV Incentives at participating Dealerships.

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Funder: National Center for Sustainable Transportation (ncst.ucdavis.edu)

Funding opportunity number: 2024-2025 NCST USDOT Research Grants

Grant: NA

Template: National Center for Sustainable Transportation - Project Data Management Plan

Project abstract:

Extending ZEV access to all and especially to low-middle income (LMI) and disadvantaged communities (DAC), is one of the core agenda of California's Advanced Clean Car II (ACC II) [1]. ZEV incentives and rebate programs like Clean Cars for All (CC4A), is facilitated through participating dealerships and are eligible to receive customer's ZEV incentive as down-payment [2]. Literature reports that dealership's attitude towards and knowledge of ZEVs have been reported to affect the purchase intentions [3] [4]. Dealers are sometimes dismissive of EVs, misinform shoppers on vehicle specifications, omit EVs from the sales conversation and strongly orient customers towards petrol/diesel vehicle options [5] [6]. Further, the used ZEV market holds immense promise for promoting equitable access to clean transportation. Research has shown that buyers from DAC, low-income and minority are more likely to buy their ZEVs used and used PEVs make up a higher share of all PEVs in DACs [7] [8] [9]. The inventory of used ZEVs, their source of procurement and the equitable treatment of LMI and DAC consumers during at these dealerships are critical factors that remain highly understudied.

This study aims to identify the existing bias, barriers, gaps, in ZEV sales process as well as the inventory and source of used ZEVs at the participating dealerships that hinder larger adoption of ZEVs, specifically in the LMI and DAC households in California. The findings of this research will contribute to developing “retail friendly” strategies at dealerships, addressing equity concerns, and identifying areas for enhancement.

Start date: 10-01-2024

End date: 10-01-2025

Last modified: 08-13-2024

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Assessing Transportation Equity in California ZEV Incentives at participating Dealerships.

Data Description

Provide a description of the data that you will be gathering in the course of your project. This could include, but is not limited to, new data you are collecting, or existing datasets (whether from a prior project or an external source). Refer to the NCST Center-wide Data Management Plan for additional examples.

Address the following, as applicable:

- 1. Name the data, data collection project, or data producing program, if applicable.**
- 2. Describe the data your project will generate in terms of nature and scale (e.g., numerical data, image data, text sequences, video, audio, database, modeling data, source code, etc.).**
- 3. Describe methods for creating the data (e.g., simulated; observed; experimental; software; physical collections; sensors; satellite; enforcement activities; research-generated databases, tables, and/or spreadsheets; instrument-generated digital data output, such as images and video; etc.).**
- 4. Discuss the period of time data will be collected and the frequency of any updates, if applicable.**
- 5. If the project uses existing data, describe the relationship between the data you are collecting and the previously collected data.**
- 6. List potential users of the data.**
- 7. Discuss the potential value that the data will have over the long-term for the NCST and for the public.**
- 8. If you request permission not to make data publicly accessible, explain the rationale for lack of public access. Provide sufficient detail so that reviewers will understand any disclosure risks that may apply.**
- 9. Indicated who will be responsible for managing the data at the project level.**

Primary data Collection:

1. Interviews with Dealerships: The study will include a series of interviews with selected dealerships to better understand the operation and implementation of incentive programs. The selection of a particular dealership will be based on few criteria like a) affiliation of dealership with one or more ZEV incentive program like CVRP, CVAP and CC4A
2. Data collected from recent EV buyers, who have been awarded with purchase incentive and will learn from their experience of ZEV purchase process at the dealership.

-These interviews will be conducted during the project period (over a period of 3 months).

-The potential users of this data can be the different state agencies that are involved in the ZEV incentives and equity ecosystem. These maybe CARB, "Clean cars for All" implementing Air quality districts authorities, CSE, Community Housing Development Corporation (CHDC), Driving Clean Assistance Program (DCAP) etc.

-The data generated during the project will have a long-term implication as no data exist on operation and implementation of incentive programs for ZEV sale process at dealership.

-the PI will be responsible for data management at project level.

Data Format and Metadata Standards

Your DMP should describe the anticipated formats that your data and related files will use. To the maximum extent practicable, and in accordance with generally accepted practices in your field, your DMP should address how you will use platform-independent and non-proprietary formats to ensure maximum utility of the data in the future. If you are unable to use platform-independent and non-proprietary formats, you should specify the standards and formats that will be used and the rationale for using those standards and formats.

Address the following, as applicable:

- 1. List in what type of format(s) the data will be collected, and indicate if they are open or proprietary.**
- 2. If you are using proprietary data formats, discuss your rationale for using those standards and formats.**
- 3. Describe how versions of the data will be signified and/or controlled.**
- 4. If the file format(s) you are using is(are) not standard to transportation, describe how you will document the alternative you are using.**
- 5. List what documentation you will be creating in order to make the data understandable by other researchers.**
- 6. Indicate the type of metadata schema you are using to describe the data. If the metadata schema is not one that is standard for your field, discuss your rationale for using that schema.**
- 7. Describe how the metadata will be managed and stored during the collection process.**
- 8. Indicate what tools or software is required to read or view the data.**
- 9. Describe the quality control measures you will implement in your project to ensure its accuracy, etc.**

- Data will be collected through interviews which will be transcribed by our research team.
- Each interview will be given a unique identifier to avoid data redundancy or data loss.
- The transcribed data of the interview will be stored as standard format (word file) and other data as Excel files.
- The data will be released in non-proprietary formats, along-side the original proprietary file formats, to ensure access by all who want to view the data. e.g. in .txt/.csv , .pdf etc.
- The data collection process, the survey interview questions, and the transcribed interviews will be properly logged so that the knowledge transfer (KT) is very clear.
- The metadata file will be created that explains the project data, its origin etc. clearly.
- The analysis will be done in NVivo and Python but the data will be converted back to Excel
- The datasheet will have detailed legends for future use

Policies for Access and Sharing

Protecting research participants and guarding against the disclosure of identities and/or confidential business information is an essential norm in scientific research. Your DMP should address these issues and outline the efforts you will take to provide informed consent statements to participants, the steps you will take to protect privacy and confidentiality prior to archiving your data, and any additional concerns (e.g., embargo periods for your data). If necessary, describe any division of responsibilities for stewarding and protecting the data among Principal Investigators or other project staff.

If you will not be able to de-identify the data in a manner that protects privacy and confidentiality while maintaining the utility of the dataset, you should describe the necessary restrictions on access and use. In general, in matters of human subject research, your DMP should describe how your informed consent forms will permit sharing with the research community and whether additional steps, such as an Institutional Review Board (IRB), may be used to protect privacy and confidentiality.

Address the following, as applicable:

- 1. List the roles that your project's data creation team members will have in data management, including any limitations on team member access due to the presence of personal or confidential information.**
- 2. Describe what data will be shared, how data files will be shared, and how others will access them.**
 - **The data to be shared should, at a minimum, be the data required to reproduce your final results, subject to those restrictions imposed by data quality and the need to protect national/homeland security, individual privacy, and confidentiality.**
- 3. Indicate whether the data contain private or confidential information. If so:**
 - **Discuss how you will guard against disclosure of identities and/or confidential business information.**
 - **Describe the processes you will follow to provide informed consent to participants.**
 - **State the party responsible for protecting the data.**
- 4. Describe if there are any privacy, ethical, or confidentiality concerns due to the sharing of data.**
- 5. If applicable, describe how you will de-identify your data before sharing. If this is not applicable to your project, then:**
 - **Identify what restrictions on access and use you will place on the data.**
 - **Discuss additional steps you will use to protect privacy and confidentiality.**

1) Only the PIs will have access to the raw survey data. Anonymized data will be shared with the graduate student researcher for analysis. The analysis data can be accessed by the student and the PIs.

2) The data used after transcribing for the final model and analysis will be shared on DRYAD as word / excel, .txt/.csv , .pdf files.

There will be no confidential or identifiable information in the final data shared on DRYAD

Policies for Re-use, Redistribution, Derivatives

Describe who will hold the intellectual property rights for the data created by your project. Describe whether you will transfer those rights to a data archive, if appropriate. Identify whether any copyrights apply to the data, as might be the case when using copyrighted instruments. If you will be enforcing terms of use or a requirement for data citation through a license, indicate as much in your DMP. Describe any other legal requirements that might need to be addressed.

Address the following, as applicable:

- 1. Name who has the right to manage the data.**
- 2. Indicate who holds the intellectual property rights to the data.**
- 3. List copyrights to the data, if any. If there are copyrights, indicate who owns them.**
- 4. Discuss any rights to be transferred to a data archive.**
- 5. Describe how your data will be licensed for re-use, redistribution, and derivative products.**

1) The PIs of the project will have the right to manage the data along with the graduate student working on the project.

2) There are no intellectual or copyrights for the final data

3) The final data will be shared on DRYAD after the project is complete

Plans for Archiving and Preservation

Describe how you intend to archive your data and why you have chosen that particular option. You must describe the dataset that is being archived with a minimum amount of metadata that ensures its discoverability.

Address the following, as applicable:

1. The data must be archived before the research project's DRAFT FINAL REPORT is delivered to the NCST Program Manager. Discuss how you intend to archive your data and where if not on Dryad (include URL).
2. Indicate the approximate time period between data collection and submission to the archive.
3. The PI of each NCST-funded project should ensure that the data to be archived temporarily at their home institution is stored securely on a designated device (computer, external hard drive, etc.). Identify where data will be stored prior to being deposited to an archive.
4. The PI of each NCST-funded project should ensure that the data collected will be backed up prior to being archived. Describe how back-up, disaster recovery, off-site data storage, and other redundant storage strategies will be used to ensure the data's security and integrity.
5. Describe how data will be protected from accidental or malicious modification or deletion prior to receipt by the archive.
6. If you will not be using Dryad,
 - Discuss your chosen data archive's policies and practices for back-up, disaster recovery, off-site data storage, and other redundant storage strategies to ensure the data's security and integrity for the long-term.
 - Indicate how long your chosen archive will retain the data.
 - Indicate if the chosen archive employs, or allows for the recording of, persistent identifiers linked to the data.
 - Discuss how your chosen data repository meets the criteria outlined in the [Guidelines for Evaluating Repositories](#) with the DOT Public Access Plan.

- 1) The data will be archived on DRYAD before the submission of the final report
- 2) No new data is being collected. The existing survey data will be analyzed and the final data will be archived
- 3) Before archiving, the data will be stored on the official computer of the PIs and the graduate student researcher. No one else will have access to the data.
- 4) The anonymized data will be archived on BOX and the official computer of the PIs.

All NCST researchers must have a unique ORCID (Open Researcher and Contributor ID) identification. [ORCID.org](https://orcid.org) provides a registry of persistent unique identifiers for researchers and scholars, and automates linkages to research objects such as publications, grants, and patents. Registration is free and takes about 5 minutes. If other researchers are added to a project after its initiation, they are also required to obtain an ORCID.

List all Principal Investigators, Co-PI(s), and key contributors, and their respective ORCIDs.

PI: [Minal Chandra], [ORCID # 0000-0002-8941-5709]

Co-PI: [JC Garcia Sanchez], [ORCID # 0000-0002-1684-5847]

Co-PI: [Gil Tal], [ORCID # 0000-0001-7843-3664]]

Planned Research Outputs

Dataset - "California ZEV Incentives - participating Dealerships Interview dataset"

California ZEV Incentives - participating Dealerships Interview dataset

Text - "Report on "Assessing Transportation Equity in California ZEV Incentives at participating Dealerships.""

Text - "Policy brief on "Assessing Transportation Equity in California ZEV Incentives at participating Dealerships.""

A 2- page Policy brief on "Assessing Transportation Equity in California ZEV Incentives at participating Dealerships."

Planned research output details

| Title | Type | Anticipated release date | Initial access level | Intended repository(ies) | Anticipated file size | License | Metadata standard(s) | May contain sensitive data? | May contain PII? |
|--|---------|--------------------------|----------------------|--------------------------|-----------------------|----------------|----------------------|-----------------------------|------------------|
| California ZEV Incentives - participating Dealersh ... | Dataset | Unspecified | Open | None specified | | None specified | None specified | No | No |
| Report on "Assessing Transportation Equity in Cali ... | Text | 2025-10-20 | Open | None specified | | None specified | None specified | No | No |
| Policy brief on "Assessing Transportation Equity i ... | Text | 2025-11-29 | Open | None specified | | None specified | None specified | No | No |