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Social and Ecological Benefits of Public Transportation System on Mo'orea

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We are still developing and optimizing this protocol

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Abstract

Mo'orea is arguably a car-centric island, with one main road wrapping 60 km all the way around the island, with many roads branching off into the island. In January 2024, a private transportation bus system widely used by the local community was discontinued due to "lack of profitability", leaving both the students and those who commute to Tahiti to work without transportation to schools and the ferry station. This research project aims to study how the implementation of a public transportation system would impact the local community and ecosystems of Mo'orea. Qualitative data, including general local views on public transit and accessibility of island, will be collected through interviews and online surveys. Quantitative data on human and environmental health in relation to public transit will also be gathered, including predicted change in automotive gas emissions, traffic and commute times, drunk driving accidents per year, and percent of population with a driver's license.

Guidelines

Conduct interviews with respect and without bias. Treat interviewee as the expert and provide compensation for their time.

Qualitative Data Collection: How Public Transport Supports Communities

1 Interview Protocol

2 Find local community members to interview, including students, families, workers who commute to the ferry station. Post flyers around the island at stores or at empty bus stops with a description of study and number/email to set up a time to interview, and provide compensation for their time. Create online survey if first method is not effective and post QR code on flyer.

3 Create questions for interviews/online surveys:
- Age
- Do you reside on the island of Mo'orea?
- Have you used the public transit bus system in the past year?
- How often did you use the previous bus system to get to school? Was it once a day, once a week, once a month, or less frequent than all above?
- How often did you use the previous bus system to get to the ferry station?
- If you used the bus, Do you commute to Tahiti for work, school, etc?
- At what times did you usually use the bus?
- How accessible is the island (grocery store, doctor, community spaces, etc) to those without a car?
- Do you have a driver's license?
- Do you have access to a car?
- What sort of incentives would you like to see in a newly implemented public transit system? (eg. discounted passes for children, students, elderly)

4 Conduct interviews with respect, and have a translator for Tahitian and French. Record interview and take notes. Provide compensation for interviewee's time.

Quantitative Data Collection: Human and Environmental Health

5 Create computer models to predict the change in atmospheric carbon dioxide due to decrease in gas emissions from cars, based on known carbon sources and sinks on the island

6 Gather data on traffic/commute times

6.1 Traffic data: Set up pneumatic tubes connected to data collector in 10 km intervals around the island on the main road. Each time a car drives over the pneumatic tubes on the road the data

collector will be activated by air pressure blowing out of the tubes. Do this for one week, to collect high traffic times for each day of the week.

6.2 Commute time data: In online survey, include question asking about commutes for those with a car. Provide given commutes routes for cleaner data collection, with option for "other".

7 Gather data on frequency of drunk driving accidents per year using local police reports.

8 Gather data on % of pop. that has a driver's license from insurance companies on Moorea

9 Estimate % of pop. that used transit system from online survey

Data Analysis

10 Quantitative Data: Create spreadsheet to organize answers from interviews/online survey. Keep tidy data methods in mind.

11 Qualitative Data: Create spreadsheets for traffic data for each day, commute routes based on popularity. Compare other data points (predicted change in gas emissions, % pop. with driver's license, estimated % of pop. that used transit system) to other similar island landscapes.

Protocol references

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