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Boise Bicycle Ridership: Locational Efficiency of Bicycle Transportation for Refugees

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**Boise Bicycle Projections: Locational Efficiency of Bicycle Transportation for Refugees**

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**Introduction**

Our objective for this research project was to develop a better understanding of the applications of economic research in real-life situations through community outreach programs such as the International Rescue Committee.

**Methods**

- Gathered anecdotal information from the Boise Bicycle Project on their bicycle program for refugees to understand cost barriers for biking.
- Estimate cost of bicycle ownership.
- Use housing and employment data to gauge the average cost of bicycle ownership for our target population.
- Survey used to understand refugee opinions on cost barriers of biking.
- Proposed strategies for efficiency improvement for the IRC and Boise Bicycle Project using survey and research results.

**Results**

- Time and distance are the most costly barriers to bicycle transportation.
- Other costly barriers include lack of education regarding road rules and a lack of readily available materials, like tools for maintenance and repair.
- Lack of marked bike lanes near areas that supply low-income housing.

**Recommendations**

1. Increase the number of marked bike lanes in low-income areas.
2. Further study into bicycle education programs for refugees.
3. Inclusion of repair tools with bicycle donations.

**Model: Expected Time Spent in Transit**

Using housing and employment location data, it is estimated that bicycling as the sole mode of transportation imposes an economic cost between $1,398.40 and $2,214.10 per week. This estimate accounts for opportunity costs. Thus, we assume a 3-5 day work week and 1 grocery trip, represented by \( f \) (frequency). We then weight the travel-time \((dw \text{ and } dg)\) observations with \( w \).

\[
\text{Expected time spent in transit} = (2)(f_w) \sum \frac{w_i}{w_j} (dw) + (2)(f_g) \sum \frac{w_i}{w_j} (dg)
\]

From this we can estimate the economic cost to refugees using the “Cost of Travel and Modal Choice” formula

\[
\text{Trip cost} = m + T_a d_a + T_v d_v
\]

The model assumes that monetary cost \( m \) and access time \( T_a \) are zero and that the mean wage/hour is $8.73. This information allows us to arrive at the above economic cost for refugees using bicycles as their primary mode of transportation.

**Community Partner: International Rescue Committee**

**Mission**

The International Rescue Committee responds to the world’s most humanitarian crises, helping to restore health, safety, education, economics wellbeing, and power to people devastated by conflict and disaster.

**Project Purpose**

This research provides a better understanding of the efficiency of bicycle transportation for refugees with two goals:
1. Understand the hurdles that deter bicycle use among refugees.
2. Provide achievable solutions to the IRC to increase bicycle ridership among refugees.

**Reflection**

Service Learning Experience:
To understand the importance of transportation in the lives of refugees, our team met with volunteer coordinators of two community organizations in Boise during the research phase of our project. Our results are among the first refugee-oriented efficiency studies of cycling. We learned the importance of further study into the area. We also gained skills that will serve to prepare us more adequately for the professional world, such as the importance of consistent and efficient communication with community partners. Along with this, we all gained knowledge in the research field. We developed skills for conducting surveys along with tools that we can all use for research methods in the future.

Impact on the community:
This project provides information that can be used by community organizations and city administrators. The research team hopes their recommendations will be used to increase ridership, and thus the standard of living, for Boise’s refugee population.

Sources:  [http://onthemap.ces.census.gov](http://onthemap.ces.census.gov)
Image: [http://tinyurl.com/jmyo6ab](http://tinyurl.com/jmyo6ab)