What household survey data can tell us about online purchasing patterns?

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Online shopping boom

Reference: https://bbvaopen4u.com/en/actualidad/best-online-shopping-experience-examples
Online shopping boom

What are the consequences?

Reference: https://bbvaopen4u.com/en/actualidad/best-online-shopping-experience-examples

Urban Freight Demand Data

Private companies

Public agencies
PSRC Household Survey 2014

Household (hh) level data
- Income Level
- Hh number of trips on travel day
- Hh size
- Number of adults

Person level data
- Age
- Gender
- Employment
- Education
- Purchase
PSRC Household Survey 2014

Household (hh) level data
- Income Level
- Hh number of trips on travel day
- Hh size
- Number of adults

Person level data
- Age
- Gender
- Employment
- Education
- Purchase

Adult: On travel date: Made online purchase for home delivery
1. Yes  2. No
Research Questions

● What are the characteristics of people who tend to order from the internet?

● What is the likelihood of placing an online order based on person’s demographic attributes?

● What is the amount of orders at any given day made in the area?
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Some characteristics

% of people who have made a purchase for home delivery, group by age

Gender
- Male
- Female

age
- 18-24
- 25-34
- 35-44
- 45-54
- 55-64
- 65-74
- 75-84
- 85 or older
% of people who have made a purchase for home delivery, group by education
% of people who have made a purchase for home delivery, grouped by employment
Research Questions

- What are the characteristics of people who tend to order from the internet?
- What is the likelihood of placing an online order based on person’s demographic attributes?
- What is the amount of orders at any given day made in the area?
Online order predictions based on the households survey

PSRC Household 2014 (Age, Income, Household size) Density

Validation PSRC Household 2015

Prediction Model

PSRC Synthesized Population Data

Prediction
Research Questions

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CLOSER LOOK - Downtown Seattle & U. District

% of People Who Made an Order

Land Use

Household Income Levels
Limitations

- The question does not capture a lot of things
- Synthesized population
- Sparse data
Why is this information important?

- Need to understand the impact of growing e-commerce and the way we can mitigate the consequences.
- Need to supply the appropriate freight infrastructure to support the parcel delivery flow (e.g. parking).
The opportunities

Work with local agencies to add questions about freight (deliveries).

- PSRC worked with UW on the questions about deliveries for Spring 2017 survey.
Thank you!

Any Questions?

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