

BEYOND CENSUS DATA: USING
OPEN DATA TO UNDERSTAND
COMMUNITIES AROUND PUBLIC
LIBRARIES

Sponsor: Seattle Public Library

Intern: Karalyn Ostler



OPEN DATA LITERACY (ODL)



- University of Washington Information School
- Works with public institutions to create, manage, and publish open data
- Projects range from working with data policy to curating datasets for publication
- Mentor: David Christensen, Data Analysis Lead
- Questions for this project:
 - How can a large public library system like Seattle Public Libraries use external open data to help inform staff about the needs of the community to better plan services and outreach?
 - How can open data be transformed into materials that are accessible and easy to understand?

1

- Identify data needs of SPL frontline staff

2

- Identify relevant open datasets related to Seattle and SPL

3

- Create materials using selected datasets for use by SPL staff

ASSESSING DATA NEEDS: INTERVIEWS

- Interviewed two SPL Regional Managers
 - Northeast Region: Francesca Wainwright
 - Southeast Region: Wei Cai
- Findings:
 - More granular data
 - Age
 - Income
 - Language Spoken at home
 - Private Schooling versus Public Schooling

SEARCH FOR SUITABLE OPEN DATA

- Local Data:
 - City of Seattle Open Data portal
 - Washington State Open data portal
- Data.gov
- Packaged Data in R
- **US Census Bureau**



MAP DASHBOARD

- URL: <https://kostler.shinyapps.io/SPL-Seattle-Census-Data/>
- Available Maps:
 - Median Age
 - Median Household Income
 - Language Spoken at Home
 - Student Enrollment Type (private versus public)
- Features:
 - Interactive
 - Easily accessible

City of Seattle Census Data

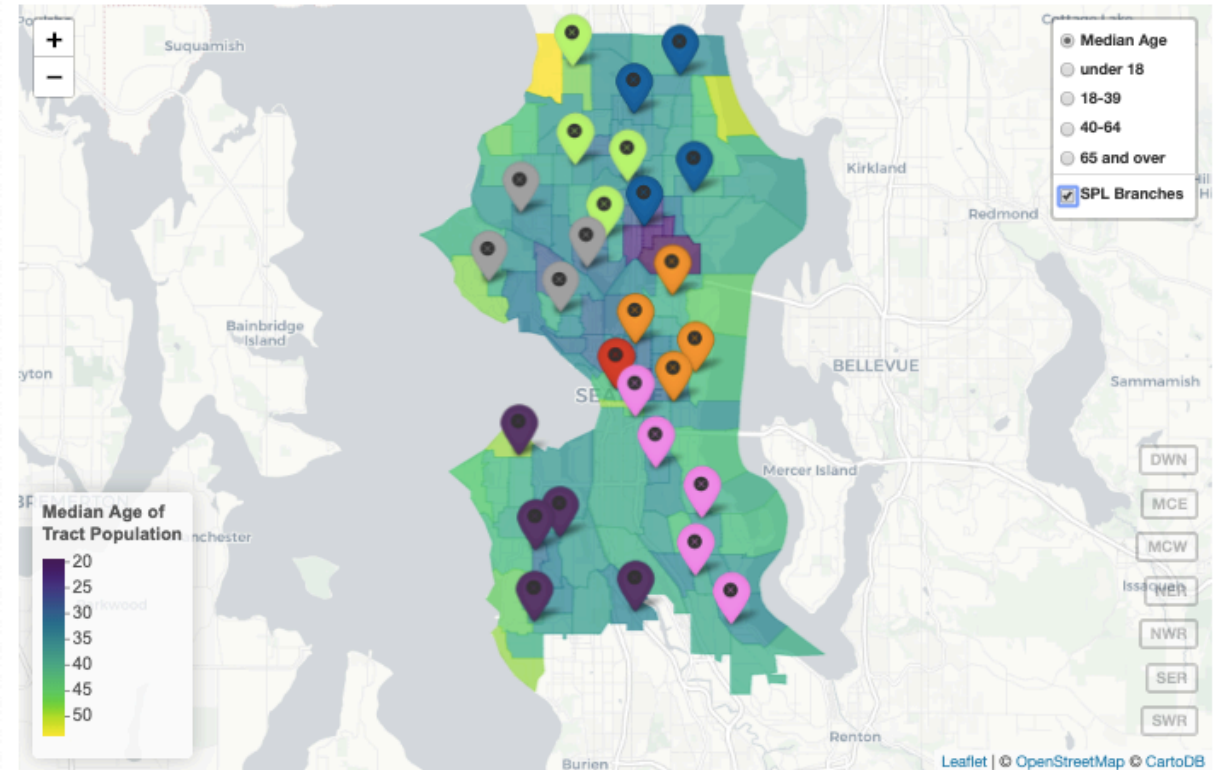
Welcome!

Below you will find four interactive maps of the city of Seattle with data from the U.S. Census Bureau. These maps are intended for use by Seattle Public Library staff to better understand the communities around each library branch. Data is based on 2017 [American Community Survey](#) estimates.

Click on a census tract or branch location below to see statistics for each area.

[Age Map](#) [Income Map](#) [Language Map](#) [School Map](#) [Help](#)

Median Age and General Age Range Breakdown



SPL Branch Markers:

■ - DWN ■ - MCE ■ - MCW ■ - NER ■ - NWR ■ - SER ■ - SWR

This data dashboard was created for SPL as a part of the [Open Data Literacy project](#). ODL is funded by a grant from the Institute of Museum and Library Services, Laura Bush 21st Century Librarians Program. Grant number 67-5285.

COMPARISON WITH INTERNAL DATASET AND REPORTS

- Dataset: SPL Borrower Data
 - Divided by branches
 - # of active uses of card by age of borrower
- Age Statistics
 - Average age of borrower at Branch
 - Percentage Breakdown:
 - Under 18
 - 18-39
 - 40-64
 - Over 65

International District/Chinatown

	SPL	Census
Average Age	39.25	35.99
Under 18	17.04 %	8.22 %
18-39	35.49 %	53.36 %
40-64	35.8 %	26.25 %
Over 65	11.67 %	12.17 %

EXAMPLE: NEWHOLLY BRANCH

Age

Average Median

Age:

38.57 years old

Age Range	% of the Population within about 1 mile	2017 % of total Borrowers at branch	2018 % of total Borrowers at branch
Under 18	21.48 %	30.20 %	28.37 %
18-39	31.37 %	43.43 %	44.72 %
40-64	33.78 %	22.62 %	22.8 %
65 and over	13.38 %	3.74 %	4.11 %

Language

Language	% of the Population within about 1 mile
Only English	52.64 %
Spanish	5.89 %
Other Indo-European	1.39 %
Asian and Pacific Island	30.35 %
Other Languages	9.73 %

Income

Average Median Household Income:
\$ 62,055.27

School Enrollment Type

	% of the enrolled students within about 1 mile	
Grades	Private School	Public School
All grades	21.63 %	78.37 %
Preschool	2.51 %	6.06 %
K-4	3.64 %	25.53 %
5-8	13.02 %	23.86 %
9-12	2.46 %	22.92 %

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FINAL RESULTS

- Dashboard with data about the community
 - Available publicly via <https://kostler.shinyapps.io/SPL-Seattle-Census-Data/>
 - Four interactive maps of census data and SPL branches
- Short report for each region
 - Available datasets found
 - Stats for each branch on topics
- Documented code
 - Available via GitHub repository:
<https://github.com/OpenDataLiteracy/SPL-KO>
 - Easily adapted by other library systems

NEXT STEPS FOR SPL

- Distribute the maps and reports for use by staff
- Share maps with SPL Foundation, in annual reports about demographics served by SPL, or even in policy advocacy (e.g. Library Levee that just passed)
- Add other datasets to maps
 - School district data, low-income housing
- Update when 2018 ACS data or 2020 Census data available
- Collect feedback from frontline staff about maps and reports
 - Are they helpful? How could they be improved?

NEXT STEPS FOR ODL

- Independent Study:
 - Add a few improvements to maps
 - Research on other library systems
 - Write journal article about project
 - Create Binder instance for R Notebook in GitHub Repo