

Internet Access Among Low-income Households in Seattle

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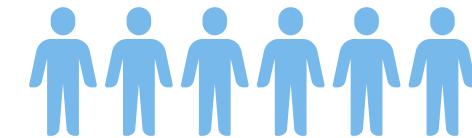


Seattle, WA

Population estimate: 733,919

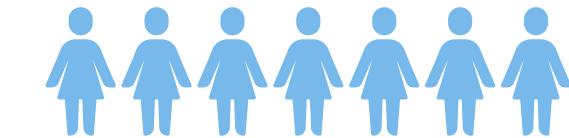
July 1, 2022

MALE



48.3%

FEMALE



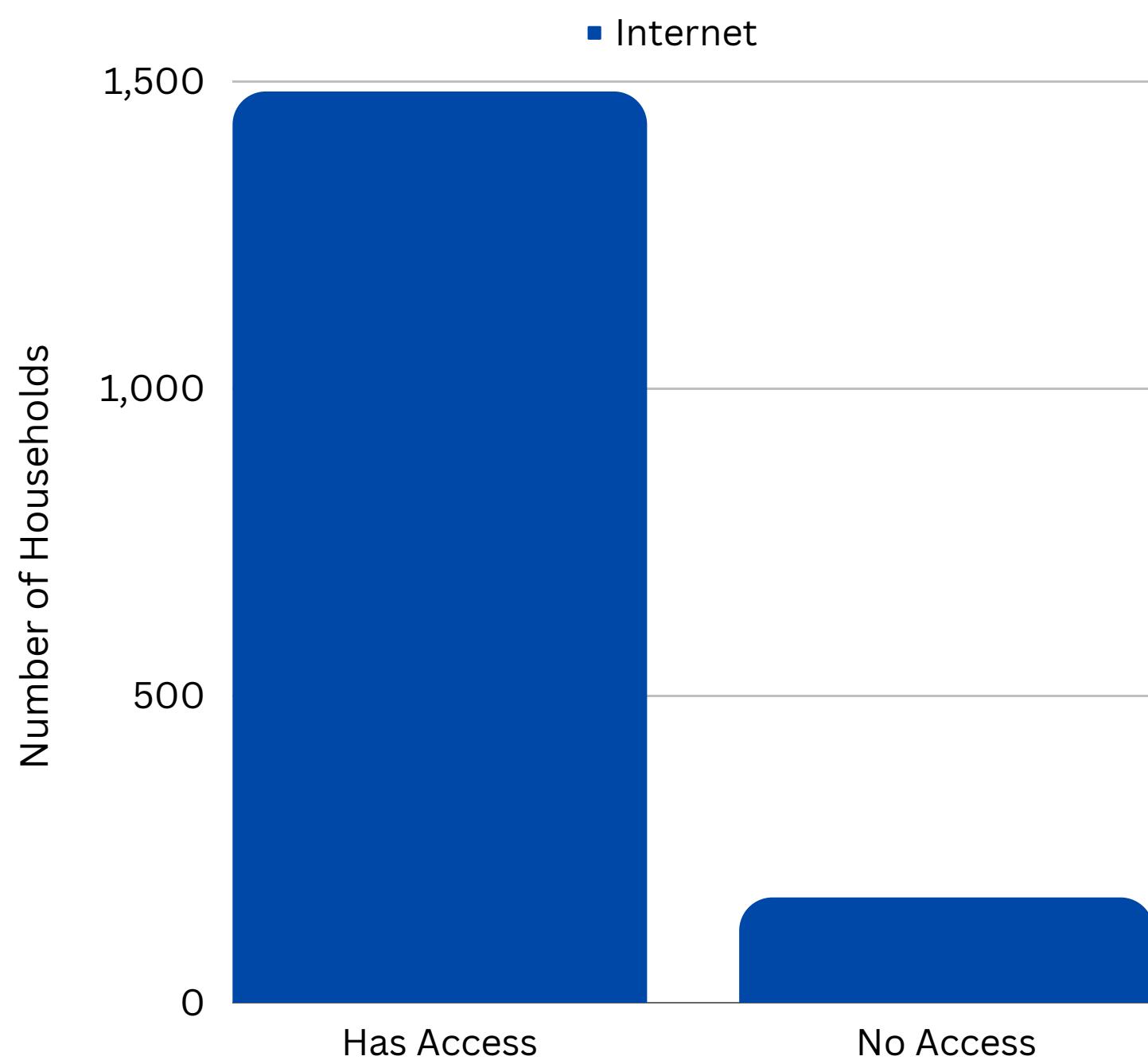
49.3%

Computer and Internet Use

Households with a computer, 2017 – 2021: 96.8%

Households with a broadband Internet subscription: 92.9%

City of Seattle Data Portal

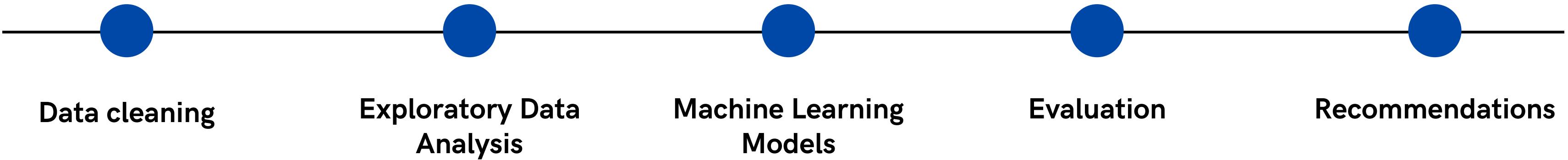


- 2018 Technology Access and Adoption Survey** ✓
- 4,315 Survey Respondents** ✓
- 38 Survey Questions** ✓
- Dataset includes 4,315 rows and 479 columns** ✓

[2018 TECHNOLOGY ACCESS AND ADOPTION SURVEY](#)

Methodology

The final dataset contained 1,483 rows and 81 columns, including respondents whose household income is below \$90,000.



Baseline Model



Precision

Class 1: 1.00

Class 2: 0.99



Recall

Class 1: 0.99

Class 2: 1.00



F1-Score

Class 1: 0.99

Class 2: 0.99



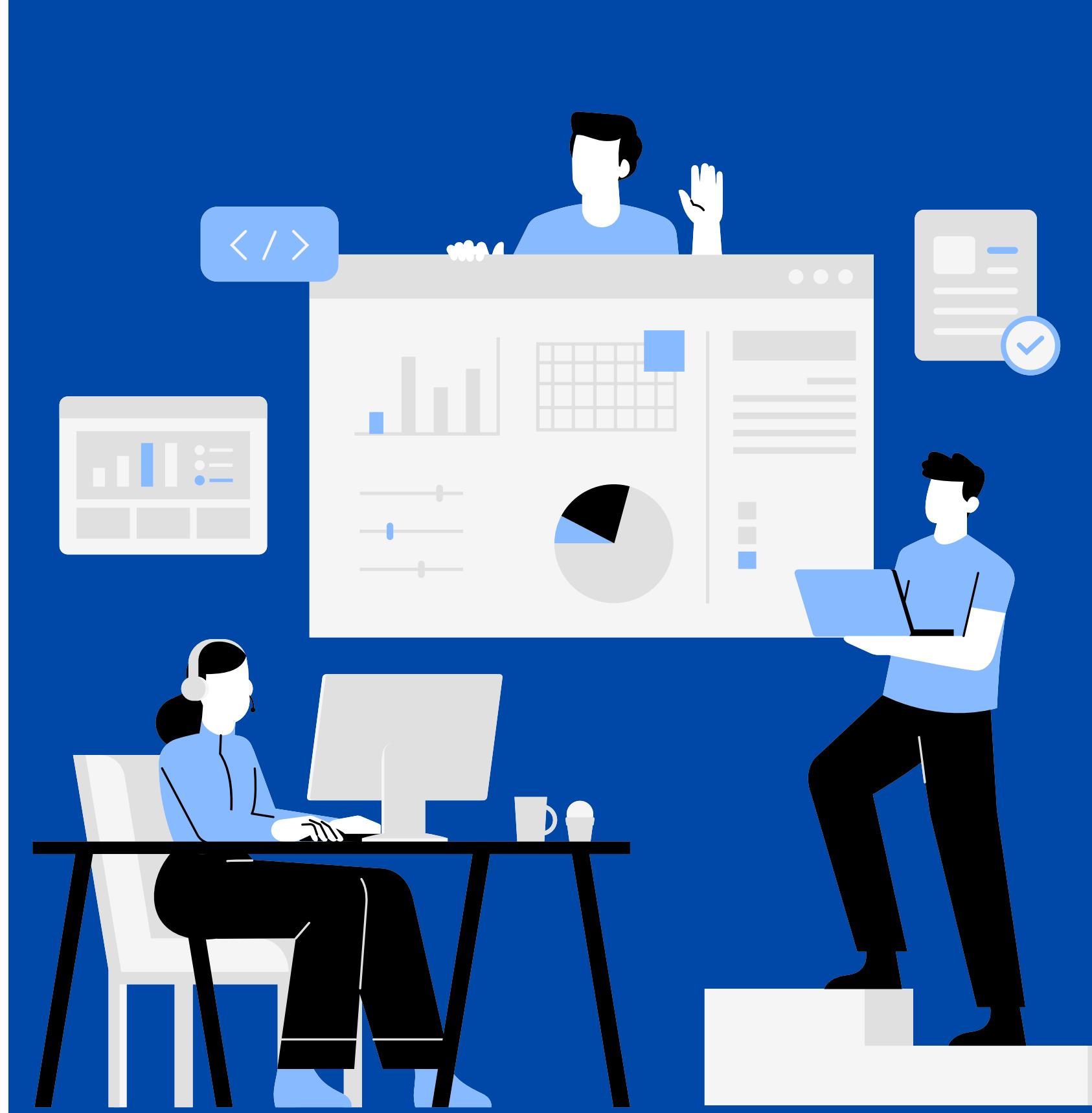
Accuracy Score

0.99

- Precision: Measures the proportion of correctly predicted positive instances out of all the instances that the model predicted as positive.
- Recall: Measures the proportion of correctly predicted positive instances out of all the actual positive instances in the dataset.
- F1-score: Weighted average of precision and recall.
- Accuracy: Measure the proportion of correctly classified instances out of all instances in the dataset.

XGBoost Model

XGBoost (Extreme Gradient Boosting) is a machine learning algorithm used for regression and classification problems.



01 Precision
Class 1: 0.99
Class 2: 0.97

02 Recall
Class 1: 1.00
Class 2: 0.92

03 F1-Score
Class 1: 0.99
Class 2: 0.95

04 Accuracy
0.98

Feature importance

01

Adequate Internet
connection speeds

02

Technology devices

03

Internet access

04

Download Speed

05

Low-cost internet
services



Recommendations

Internet should be treated as a public utility

- 01** The survey should be conducted in multiple languages.
- 02** Free in-unit connectivity for low-income households.
- 03** Advertise free or low-cost internet programs.
- 04** Limit the number of survey questions to 10.





Next Steps

To bridge the digital gap among low-income households, it is imperative to collect comprehensive data from all such households in the US. This will enable Congress to take proactive steps towards providing free internet access to these households, complete with sufficient download speeds that are tailored to their respective household sizes and number of devices.

Survey

Focus Groups

Thank you for your time



Brittney Nitta-Lee
Founder

Thank you for your time!



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