ROBOSTPR Consulting Report

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Purpose of Document

According to the Federal Communications Commission (FCC), their top consumer complaint is unwanted spam or robocalls. ROBOSTPR is committed to providing foolproof software in blocking these spam calls from unknown numbers. This report will analyze which parts of California experience the most spam calls, when these calls occur most often and which age demographic are most likely to receive these calls. Using this data, we will determine what the optimal pricing strategy is for your product in order to maximize profits and ensure customer satisfaction.

Description of Data

The data is from the FCC's Open Data Website and the U.S. Census Bureau's American Community Survey (ACS) which is annually accumulated. The FCC data engages with important variables describing the complaints sent to the FCC from January 2021 to July 2022 such as the zip code where the complaint originated from, the phone number from which the spam or robocall came from, the date the incident occurred, the time of day the incident occurred, and how the spam or robocall connected with the individual. The ACS data contains the ZIP code areas, the median income in each ZIP code, the median age in each ZIP code, and the total population within each ZIP code. Both the FCC and ACS are legitimate and reliable databases as each are federally sponsored and checked.

To clean the data, I combined the FCC and ACS data to focus on several key variables: the median age in each ZIP code, the median income in each ZIP code, the total population within each ZIP code, the ZIP code where the complaint originated from, and the time the complaint occurred. Additionally, I added three variables to the aggregated data set: the total number of complaints per grouping, the number of complaints per-1000 people in each ZIP code, and lastly a variable labeling each ZIP code as "Below Average Median Income" if the median income was below its mean and "Above Average Median Income" otherwise.

Note: Figure 1. Subset of Data and Key Variables

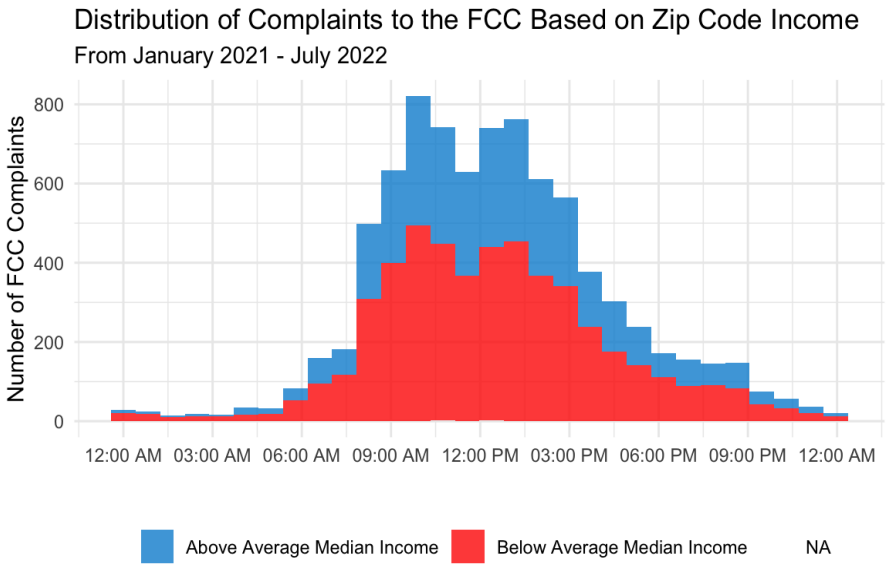
median_age	median_income	total_pop	zip	low_income_zip	time_of_issue_clean	n_complaints	complaints_per_1000
38.1	104646	43022	94531	Above Average Median Income	23:59:00	1	0.0232439
39.0	104802	25156	91403	Above Average Median Income	23:59:00	1	0.0397519
36.8	126757	31236	95131	Above Average Median Income	23:56:00	1	0.0320143
41.9	73083	26409	95242	Below Average Median Income	23:56:00	1	0.0378659
35.2	79790	63161	92627	Below Average Median Income	23:55:00	1	0.0158326
34.7	65269	68906	90026	Below Average Median Income	23:54:00	1	0.0145125

Demographics & Pricing Analysis

I have created three visuals below to display relevant information about the FCC and ACS data which we will use in determining an optimal pricing strategy for the spam blocking software.

Figure 2 below shows the distribution of complaints to the FCC for zip codes above and below the median income. It also displays which time frame throughout the day that spam calls are most likely to occur. From roughly about **10:00AM.-2:00P.M**. the number of FCC spam complaints peak in both above and below average median income zip codes probably because individuals are more likely to pick up the phone during these hours.

Note: Figure 2



Moreover, the graph tells us that zip codes with median incomes above average receive a higher number of FCC spam complaints than zip codes with median incomes below average. ROBOSTPR should set software prices higher in zip codes with above average median incomes because the issue occurs more frequently and therefore, there is a higher demand for this type of product. These households are also likely to be willing to pay for a more expensive software package since their income is above average. Contrastly, the software should be cheaper in regions with below average median incomes because the total number of FCC complaints is lower; we want to make sure that the product is affordable for these households to ensure the maximum number of customers sign up for the service.

To determine which areas receive the most spam calls, I created a measure of complaints per-1000 people in each ZIP code which adjusted for the vast differences in population between ZIP codes. Figure 3 shows the top 6 cities in California with the highest number of FCC Complaints based on

their population size: **Auburn, El Portal, Elmira, Mill Creek, Redding, and Richvale.** Because spam calls occur more often in these regions, demand will be higher and thus, ROBOSTPR should raise the software's price slightly above baseline to maximize profits. However, Mill Creek's number of FCC complaints (**47.62**) is significantly higher than the other five cities. We should account for this difference by raising the software pricing accordingly in this zip code.

Note: Figure 3

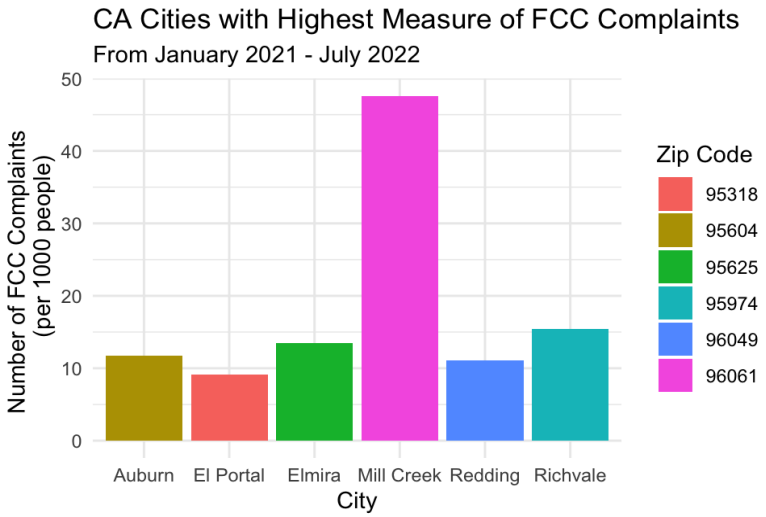
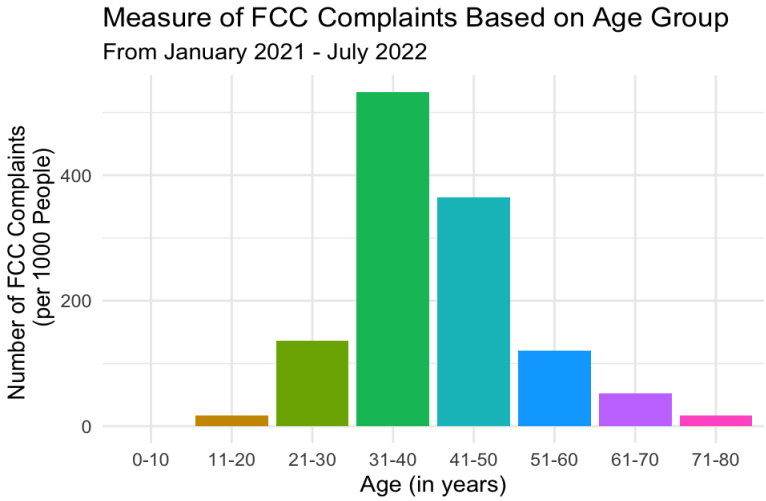


Figure 4 uses the same measure of complaints per-1000 people in each zip code to establish which age group receives the most spall calls. The graph shows that the target demographic is mainly people between the ages of about **30 and 50** years old; people in this age group are more likely to receive spam calls because their income is probably higher and more stable which is valuable to a scammer. Thus, we should make this age group our target market for ROBOSTPR's software..

Note: Figure 4



Conclusion

Overall, ROBOSTPR's price for the spam blocking software must account for household income, location, and the age of its customers. Since spam calls tend to target individuals between the ages of about 30 to 50 years old, this should also be the age group that we promote our product to, especially because these individuals are more likely to have a stable income and willing to purchase a software that blocks these types of spam calls. Moreover, the price should increase in areas with above average median incomes and where spam calls occur most frequently since demand is higher and because the households will be more likely to pay for the product. Using this information and pricing strategy, ROBOSTPR will be able to sell its product at an ideal rate to maximize profits. However it is important to note that this analysis is limited. A better pricing strategy may be reached if we gather data that accounts for what other software companies are providing similar products as well as what price they are selling them for according to each zip code. Moreover, we must take into consideration how the current economy is doing as our product's value may fluctuate depending on the state of the market. Lastly, it may be beneficial to analyze more information about our customers besides just age and income to ensure that we are targeting the correct consumer group.

Please let me know if you have any questions. Feel free to contact me at maiyaeve@ucsb.edu or through my work number. I look forward to seeing you next Monday to discuss and develop the next steps of ROBOSTPR's pricing strategy.