Data Analysis of Crimes in San Francisco

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Introduction

➢ All of us live in the Bay Area and have witnessed the exponential increase in crimes since COVID-19

➢ Analysis tools we used were Tableau, Microsoft Excel, and Google Sheets

Our Client:

➢ Bay Alarm Company

    ○ Tim Westphal (Chief Operating Officer)

These are the questions our client has asked us to answer:

➢ Find the neighborhoods with the highest crime rate in San Francisco
➢ Identify which days of the week have the highest crime rates, by district and overall within the entire San Francisco area
➢ Discover which neighborhoods have the most unsolved crimes and what they are
➢ Determine which crimes are most prone in each neighborhood

AGENDA

A Glimpse Into Neighborhoods

A Breakdown of Crimes by Day of Week

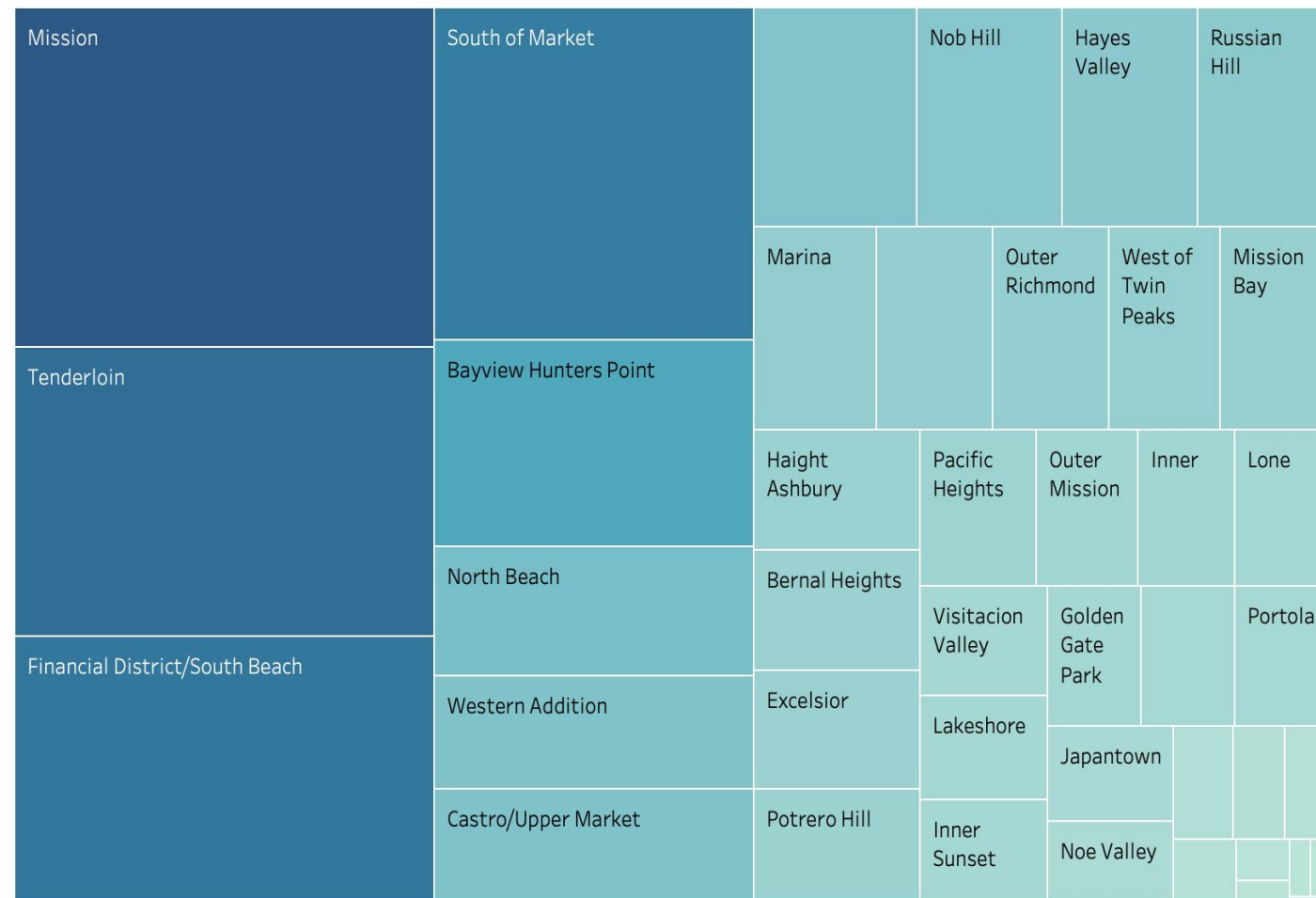Unsolved Crimes

Neighborhoods v.s Top 5 Crimes

Key Insights

Conclusions & Recommendations

A Glimpse Into Neighborhoods

Treemap of Crime per Neighborhood

Mission

South of Market

Nob Hill

Hayes Valley

Russian Hill

Marina

Outer Richmond

West of Twin Peaks

Mission Bay

Tenderloin

Bayview Hunters Point

Haight Ashbury

Pacific Heights

Outer Mission

Inner

Lone

North Beach

Bernal Heights

Visitacion Valley

Golden Gate Park

Portola

Financial District/South Beach

Western Addition

Excelsior

Lakeshore

Japantown

Castro/Upper Market

Potrero Hill

Inner Sunset

Noe Valley

➢ 5 neighborhoods out of 42 consists of more than ⅓ of SF's reported crimes:
- ○ Mission
- ○ Tenderloin
- ○ Financial District
- ○ South of Market
- ○ Bayview Hunters point

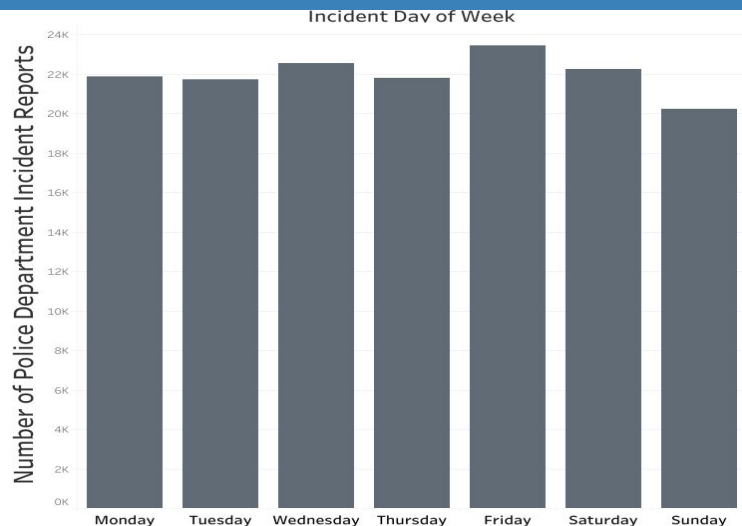➢ 4 neighborhoods with the lowest reported incidents:
- ○ Seacliff
- ○ Presidio
- ○ Pacific Heights
- ○ McLaren Park

A Breakdown of Crimes by Day of Week

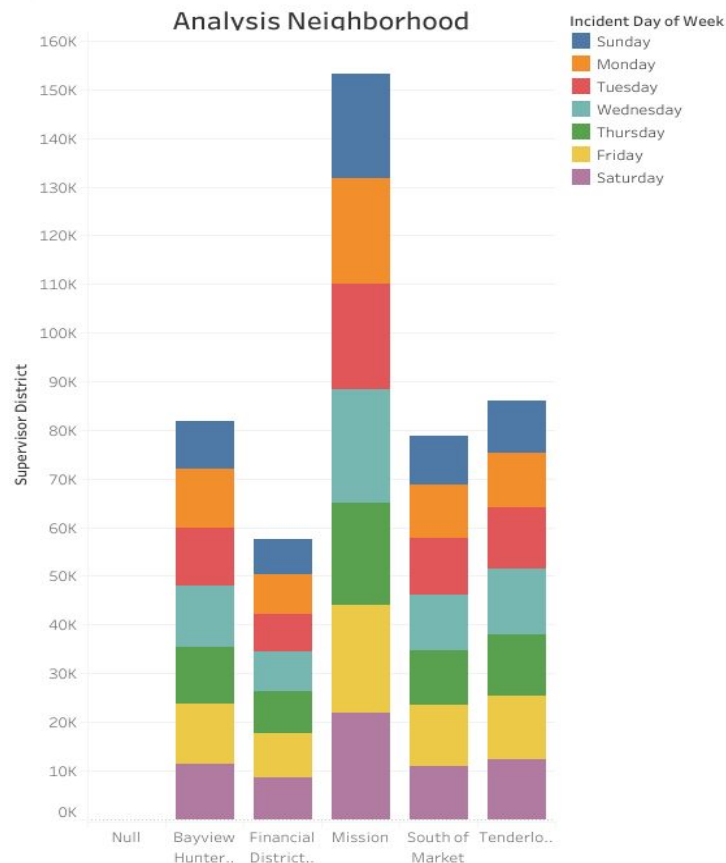# Crimes by Day of Week

Crimes by Day of Week

-No real variation in crime rates throughout the week

Crimes by District w/ Day of week

-Proportionate crimes within districts

-Different crime rates

Incidents by Police Station Disctrict

5 SF Police Districts with the most incidents:
1. Central
2. Mission
3. Southern
4. Northern
5. Tenderloin

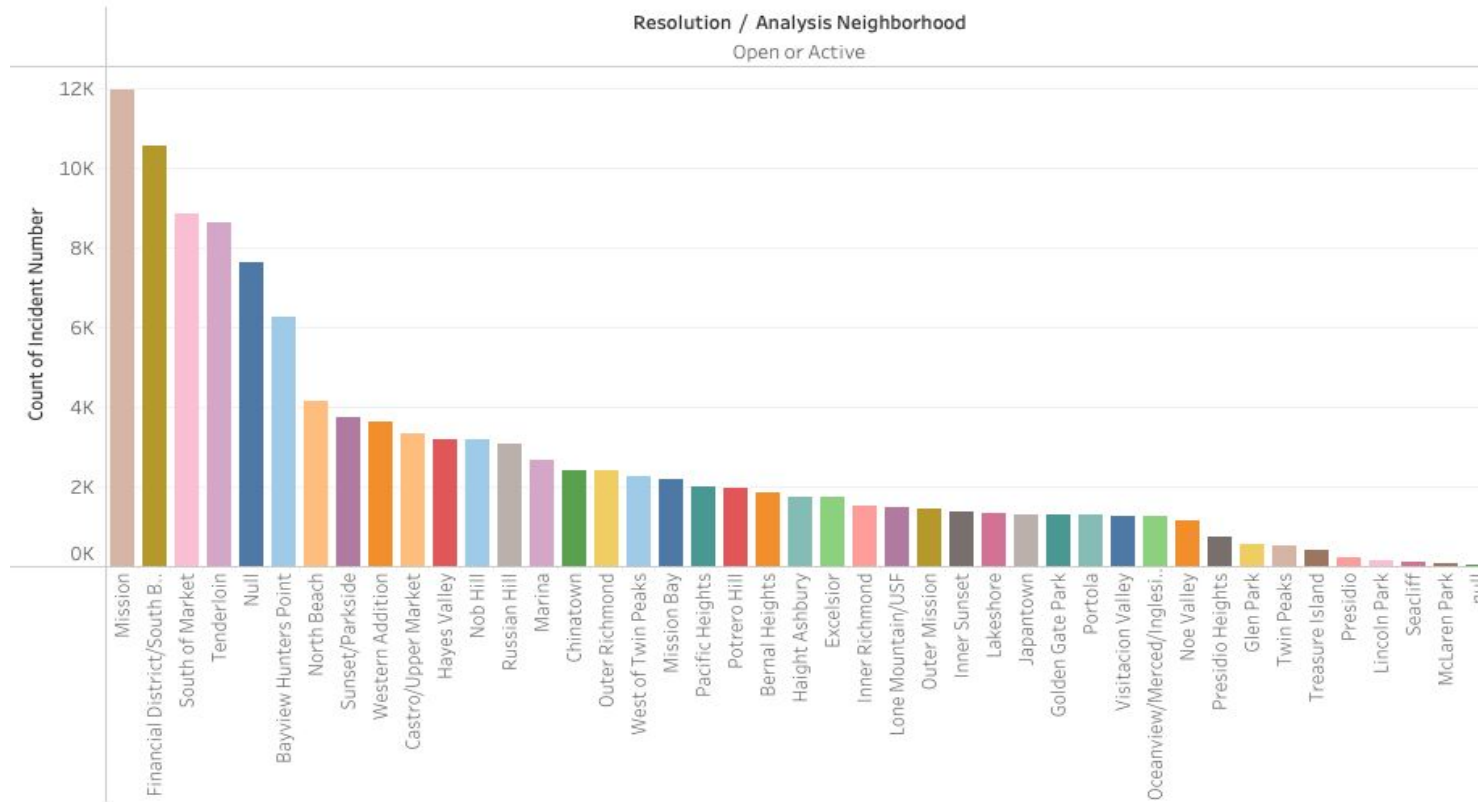3 SF Police Districts with the least incidents:
1. Park
2. Richmond
3. Taraval

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Unsolved Crimes

Neighborhoods with Unsolved Crime
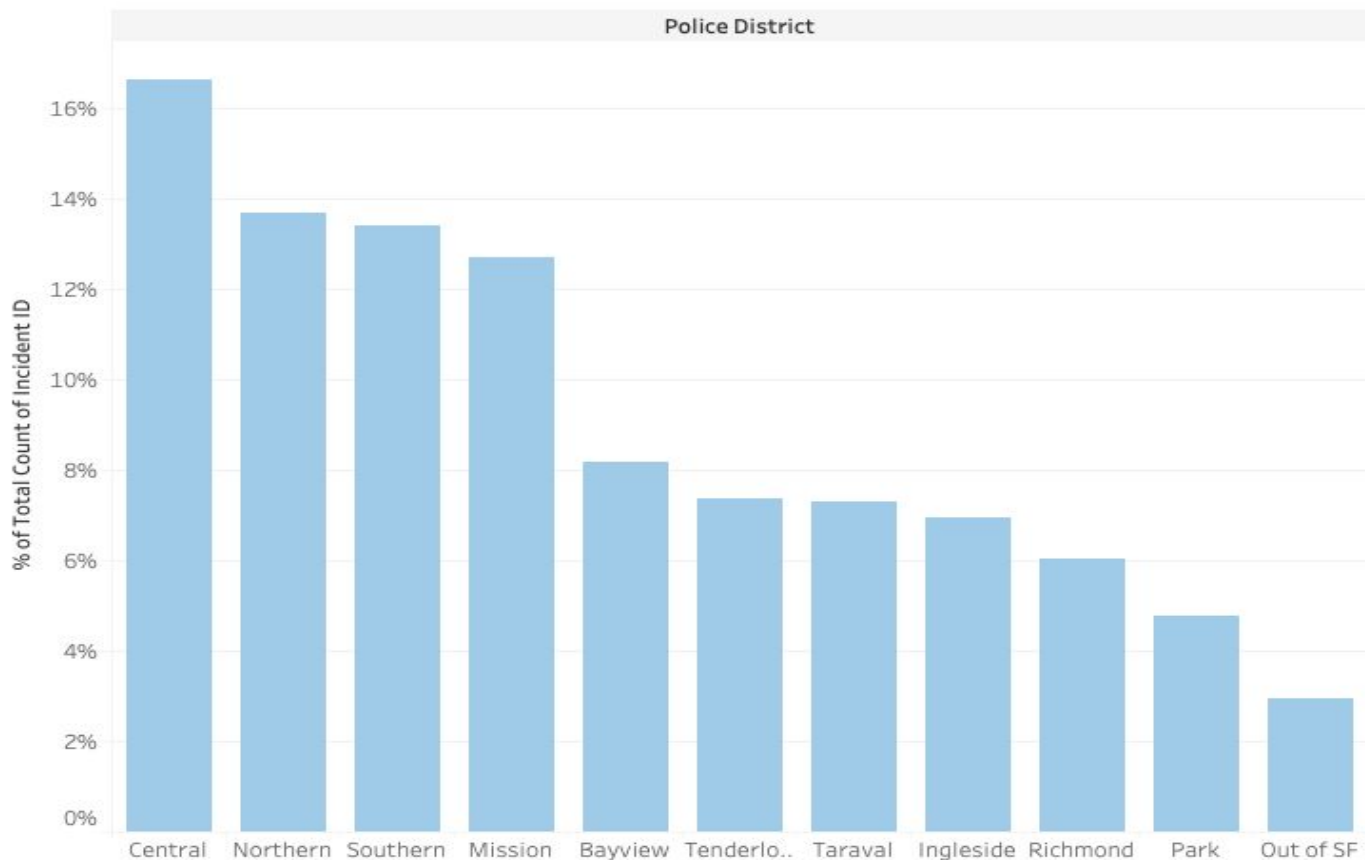

Resolution / Analysis Neighborhood
Open or Active

Top 3 Neighborhoods

1. Mission
2. Financial District
3. South of Market

Percentage of Unsolved Crimes in each Police District

Unsolved Crime

Central: 16.64%
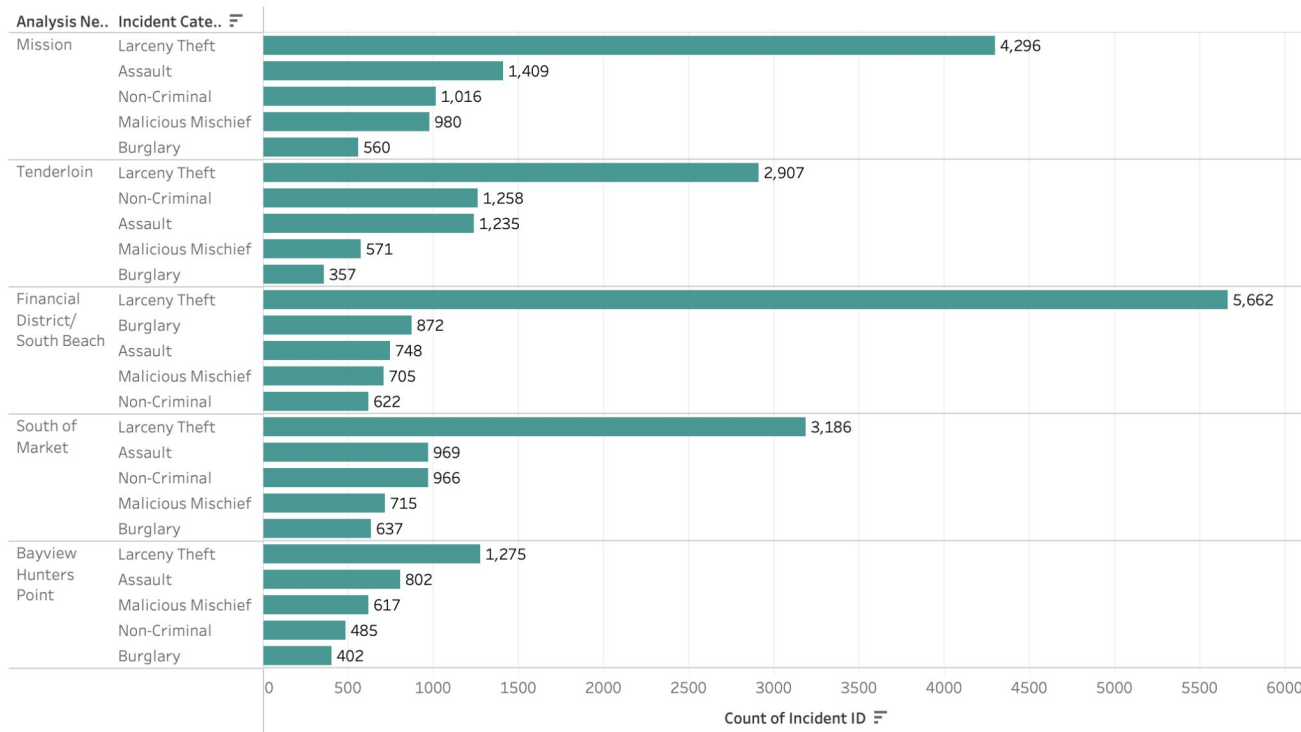Northern: 13.69%
Southern: 13.61%
Mission: 12.7%

Most dangerous Neighborhoods

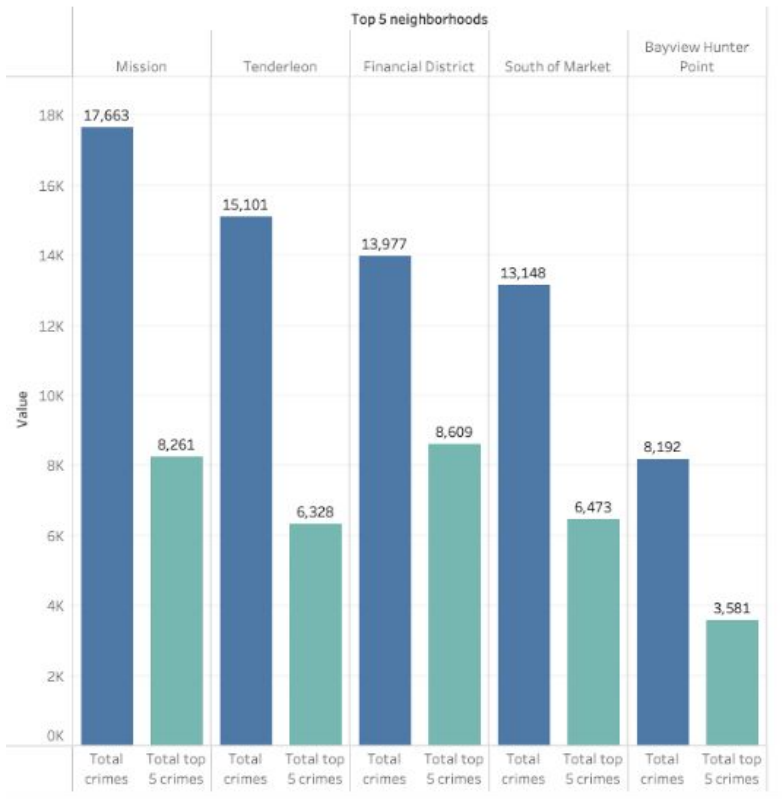# v.s.

Top 5 Crimes in San Francisco

Top 5 crimes in the top 5 neighborhoods

Analysis Ne..	Incident Cate..	Count of Incident ID
Mission	Larceny Theft	4,296
	Assault	1,409
	Non-Criminal	1,016
	Malicious Mischief	980
	Burglary	560
Tenderloin	Larceny Theft	2,907
	Non-Criminal	1,258
	Assault	1,235
	Malicious Mischief	571
	Burglary	357
Financial District/ South Beach	Larceny Theft	5,662
	Burglary	872
	Assault	748
	Malicious Mischief	705
	Non-Criminal	622
South of Market	Larceny Theft	3,186
	Assault	969
	Non-Criminal	966
	Malicious Mischief	715
	Burglary	637
Bayview Hunters Point	Larceny Theft	1,275
	Assault	802
	Malicious Mischief	617
	Non-Criminal	485
	Burglary	402

Count of Incident ID

Based on each neighborhood's total crimes in San Francisco:
- 5 top neighborhoods: Mission, Tenderloin, Financial District, South of Market, and Bayview Hunters Point
- 5 highest crimes in San Francisco: Larceny Theft, Non-Criminal, Assault, Malicious Mischief and Burglary

	Neighborhoods	Total crimes	Total top 5 crimes	Top 5 crimes percentage
1	Mission	17,663	8,261	46.77%
2	Tenderloin	15,101	6,328	41.90%
3	Financial District	13,977	8,609	61.59%
4	South of Market	13,148	6,473	49.23%
5	Bayview Hunter Point	8,192	3,581	43.71%

Comparison of the top 5 neighborhoods' total crimes and the total of top 5 crimes

For example, 8,261 top 5 crimes that occurred in Mission, represents 46% of all crimes in this area.

Key Insights

1. Crimes in Pac Heights constitutes 12% of crimes in Mission, crimes in Presidio constitutes 1% of crimes in Mission, and crimes in Seacliff constitutes 0.08% of crimes in Mission district.

2. Percentages of 5 high-rated crimes (Larceny Theft, Non-Criminal, Assault, Malicious Mischief and Burglary) are more than 40% in each neighborhood including top 5 (Mission, Tenderloin, Financial District, South of Market, and Bayview Hunters Point).

3. The top 3 neighborhoods with the most unsolved crime are Mission, Financial District, and South of Market.

Conclusions & Recommendations

Conclusions

➢ There is demand for significant security measures to be implemented in these neighborhoods: Mission, Tenderloin, Financial District, South of Market, and Bayview Hunters point

➢ There is no significant difference between crime rates throughout the week

➢ Larceny Theft, Non-Criminal, Assault, Malicious Mischief and Burglary are the highest rated crimes and they represent over 40% of total crime in each neighborhood

Recommendations

➢ Multi-language advertisements and market towards target customers in districts living within neighborhoods with higher crime and unsolved crime rates such as: Mission, Tenderloin, South of Market, Financial District, and Bayview Hunters Point

➢ Invest in multi-language community digital security applications that have the ability to alert, discourage, and raise awareness about crimes happening within the community (i.e Citizens App)

➢ Locate houses and apartments that haven't installed a security system in the highest-rated neighborhoods and recommending proper and economic products to them through financial incentives

Sources

City and County of San Francisco Streets and Police Districts. San Francisco Police Department's Crime
	Analysis, 2015, https://sfgov.org/policecommission/sites/default/files/Citywide_District_Map.pdf.

"Map of Police Stations (2011): DataSF: City and County of San Francisco." San Francisco Data,
	https://data.sfgov.org/Public-Safety/Map-of-Police-Stations-2011-/a9xm-jdem.

"2018 SF Crime Data." Google Sheets, Google,
	https://docs.google.com/spreadsheets/d/1EqmOIKQRmY_2I2tyRj4Yj0yE_-4cSsxnSY1u1edmzSA/ed
	it#gid=734095610.