



Data
Science

CRIMES IN LOS ANGELES



TEAM 7: GROUP DETAILS:

SAI PAVAN MEKALA: LED THE DATA COLLECTION AND INITIAL DATA CLEANING PROCESS.

JAGADEESHWAR KALYANAPU: FOCUSED ON DATA ANALYSIS AND VISUALISATIONS.

KUNDANA CHOWDARY CHERUKURI: DEVELOPED VISUALIZATIONS AND MANAGED THE PROJECT DOCUMENTATION.

INTRODUCTION

THE DECISION TO CHOOSE TO EXAMINE LOS ANGELES CRIME INCIDENTS FROM 2020 TO 2024 WAS MADE IN RESPONSE TO THE GROWING NEED TO COMPREHEND THE DYNAMICS OF URBAN CRIME FOLLOWING MAJOR SOCIAL SHIFTS LIKE THE COVID-19 PANDEMIC. THIS TIME FRAME REPRESENTS A SPECIAL MOMENT IN THE HISTORY OF PUBLIC SAFETY AND URBAN MANAGEMENT, PROVIDING A CHANCE TO RESEARCH HOW DIFFERENT PREVENTATIVE TACTICS WORK AND HOW CRIME TRENDS ARE CHANGING.⊕

GOALS

01

How have crime rates changed over time?

Bar chart showing increase in crime rates up to 2024

02

Which areas in Los Angeles have the highest crime rates?

Tree map of LA's highest crime rate regions.

03

Did significant events (e.g., COVID-19 pandemic) impact crime rates and types?

Bar chart comparing crime rates pre and post-pandemic

DATASET OVERVIEW

Why did we choose this dataset?



Relevance

Real-World Application:

Provides real-world data from over 932931 directly aligning with our research domain.

Diverse Metrics:

The dataset includes crime type, victim demographics, incident timing, location specifics, weapon details, and case status, offering rich analytical possibilities.



Data Quality

Well-Structured Format:

The data is well-organized, facilitating easy access and interpretation.

Easy Cleaning and Pre-processing:

Demonstrates high data cleanliness and standardization, simplifying the pre-processing steps.

DATASET OVERVIEW

About the Dataset

932141

records

16 columns in total

6

Categorical Variables

10

Non-Categorical Variables



FEATURES OF THE DATASET

DR_NO

Unique identifier for each record.

Date Rptd

Date when the incident was reported

DATE OCC

Date when the incident occurred.

TIME OCC

Time when the incident occurred.

AREA

Numeric code representing a specific geographical area or police precinct.

AREA NAME

Name of the area or police precinct.

Rpt Dist No

Reporting district number, specifies a smaller zone within the area.

FEATURES OF THE DATASET

Part 1-2

Indicates if the crime is Part 1 (more serious) or Part 2.

Crm Cd

Crime code, numeric representation of the crime type.

Crm Cd Desc

Description of the crime.

Vict Age

Age of the victim.

Vict Sex

Gender of the victim

Vict Descent

Race or ethnicity of the victim

Premis Cd

Premise code, numeric identifier of the location type where the crime occurred.

Premis Desc

Description of the premise where the crime occurred.

FEATURES OF THE DATASET

Weapon Used Cd
Code for the type of weapon used, if applicable.

Weapon Desc
Description of the weapon used

Status
Current status of the case (e.g., Investigative Continuation).

Crm Cd 1
Additional code related to the crime (if applicable)

LOCATION:
Street address or intersection where the incident occurred

Status Desc
Description of the case status

DATA CLEANING

Missing and
Duplicate
Check



Number Format to time
conversion

File Draw Page Layout Formulas Data Review View Automate

Calibri (Body) 12 A A Wrap Text General Conditional Formatting

B I U | Merge & Centre % Conditional Formatting

Loss: Some features might be lost if you save this workbook in the comma-delimited (.csv) format. To preserve these features, save it in an Excel file.

	A	B	C	D	E	F	G	H	I
	Date Rptd	DATE OCC	TIME OCC	AREA	AREA NAME	Rpt Dist No	Part 1-2	Crm Cd	Crm C
1	190326475	03/01/2020 00:00	03/01/2020 00:00	21:30:00	7 Wilshire	784	1	510 VEHIC	
2	200106753	02/09/2020 00:00	02/08/2020 00:00	18:00:00	1 Central	182	1	330 BURC	
3	200320258	11/11/2020 00:00	11/04/2020 00:00	17:00:00	3 Southwest	356	1	480 BIKE	
4	200907217	06/10/2023 00:00	03/10/2020 00:00	20:37:00	9 Van Nuys	964	1	343 SHOF	
5	220614831	08/18/2022 12:00:00	A 08/17/2020 12:00:00	12:00:00	6 Hollywood	666	2	354 THEF	
6	231808869	04/04/2023 00:00	12/01/2020 00:00	23:00:00	18 Southeast	1826	2	354 THEF	
7	230110144	04/04/2023 00:00	07/03/2020 00:00	9:00:00	1 Central	182	2	354 THEF	
8	220314085	07/22/2022 12:00:00	A 05/12/2020 00:00	11:10:00	3 Southwest	303	2	354 THEF	
9	231309864	04/28/2023 12:00:00	A 12/09/2020 00:00	14:00:00	13 Newton	1375	2	354 THEF	
10	211904005	12/31/2020 12:00:00	A 12/31/2020 12:00:00	12:20:00	19 Mission	1974	2	624 BATT	
11	221804943	01/21/2022 12:00:00	A 07/01/2020 00:00	13:35:00	18 Southeast	1822	2	354 THEF	
12	221908151	04/12/2022 00:00	10/01/2020 00:00	11:00:00	19 Mission	1988	1	821 SODC	
13	230204214	01/05/2023 00:00	02/01/2020 00:00	8:00:00	2 Rampart	201	2	812 CRM	
14	221008844	05/06/2022 00:00	11/01/2020 00:00	1:30:00	10 West Valley	1029	1	510 VEHIC	
15	230207571	03/16/2023 12:00:00	A 01/01/2020 00:00	15:00:00	2 Rampart	271	2	810 SEX,L	
16	230312258	06/01/2023 00:00	02/02/2020 00:00	3:15:00	3 Southwest	391	2	354 THEF	
17	231805781	02/03/2023 00:00	07/01/2020 00:00	8:05:00	18 Southeast	1802	2	354 THEF	
18	231322474	12/24/2023 12:00:00	A 01/09/2020 00:00	12:00:00	13 Newton	1354	2	354 THEF	
19	210705560	11/27/2020 12:00:00	A 11/27/2020 12:00:00	18:00:00	7 Wilshire	776	1	230 ASSA	
20	221016258	09/20/2022 12:00:00	A 01/01/2020 00:00	11:00:00	10 West Valley	1067	2	856 LETTI	
21	220705246	02/03/2022 00:00	02/11/2020 00:00	12:00:00	7 Wilshire	747	1	341 THEF	
22	230808643	04/25/2023 12:00:00	A 01/01/2020 00:00	8:00:00	8 West LA	801	1	341 THEF	
23	231907172	03/21/2023 12:00:00	A 03/15/2020 12:00:00	12:00:00	19 Mission	1983	2	812 CRM	
24	232011098	06/04/2023 00:00	07/01/2020 00:00	12:00:00	20 Olympic	2088	2	812 CRM	
25	200412582	09/09/2020 00:00	09/09/2020 00:00	6:30:00	4 Hollenbeck	413	1	510 VEHIC	
26	232112438	08/03/2023 00:00	07/01/2020 00:00	12:00:00	21 Topanga	2157	2	354 THEF	
27	221105176	02/02/2022 00:00	02/09/2020 00:00	12:00:00	11 Northeast	1132	2	930 CRIM	
28	222106031	02/23/2022 12:00:00	A 08/14/2020 12:00:00	13:00:00	21 Topanga	2113	2	608 EMBS	
29	211209197	03/20/2021 12:00:00	A 07/01/2020 00:00	14:25:00	12 77th Street	1243	2	354 THEF	
30	220808837	04/28/2022 12:00:00	A 03/30/2020 12:00:00	16:30:00	8 West LA	842	2	624 BATT	
31	231207725	02/27/2023 12:00:00	A 01/27/2020 12:00:00	6:35:00	12 77th Street	1242	2	354 THEF	
32	231205231	01/17/2023 12:00:00	A 01/01/2020 00:00	15:35:00	12 77th Street	1268	2	354 THEF	
33	231108757	06/09/2023 00:00	05/08/2020 00:00	20:23:00	11 Northeast	1101	1	330 BURC	
34	221404806	01/19/2022 12:00:00	A 01/18/2020 12:00:00	16:00:00	14 Pacific	1446	1	420 THEF	
35	220215983	09/06/2022 00:00	05/26/2020 12:00:00	12:00:00	2 Rampart	233	1	420 THEF	
	No	Master	1 Man	No	Dev	25			
	No	Other	1 Man	No	Dev	31			
	No	PhD	1 Man	No	Dev	18			
	No	Undergraduate	1 Man	No	Dev	26			
	No	NoHigherEd	1 Man	Yes	NotDev	20			
	No	Undergraduate	1 Man	No	Dev	10			
	No	Master	1 Man	No	Dev	10			
	No	Master	0 Man	No	Dev	8			
	No	Other	0 Man	Yes	Dev	18			
	No	Undergraduate	1 Man	No	Dev	4			

ALL MISSING RECORDS

0

DUPLICATE RECORDS

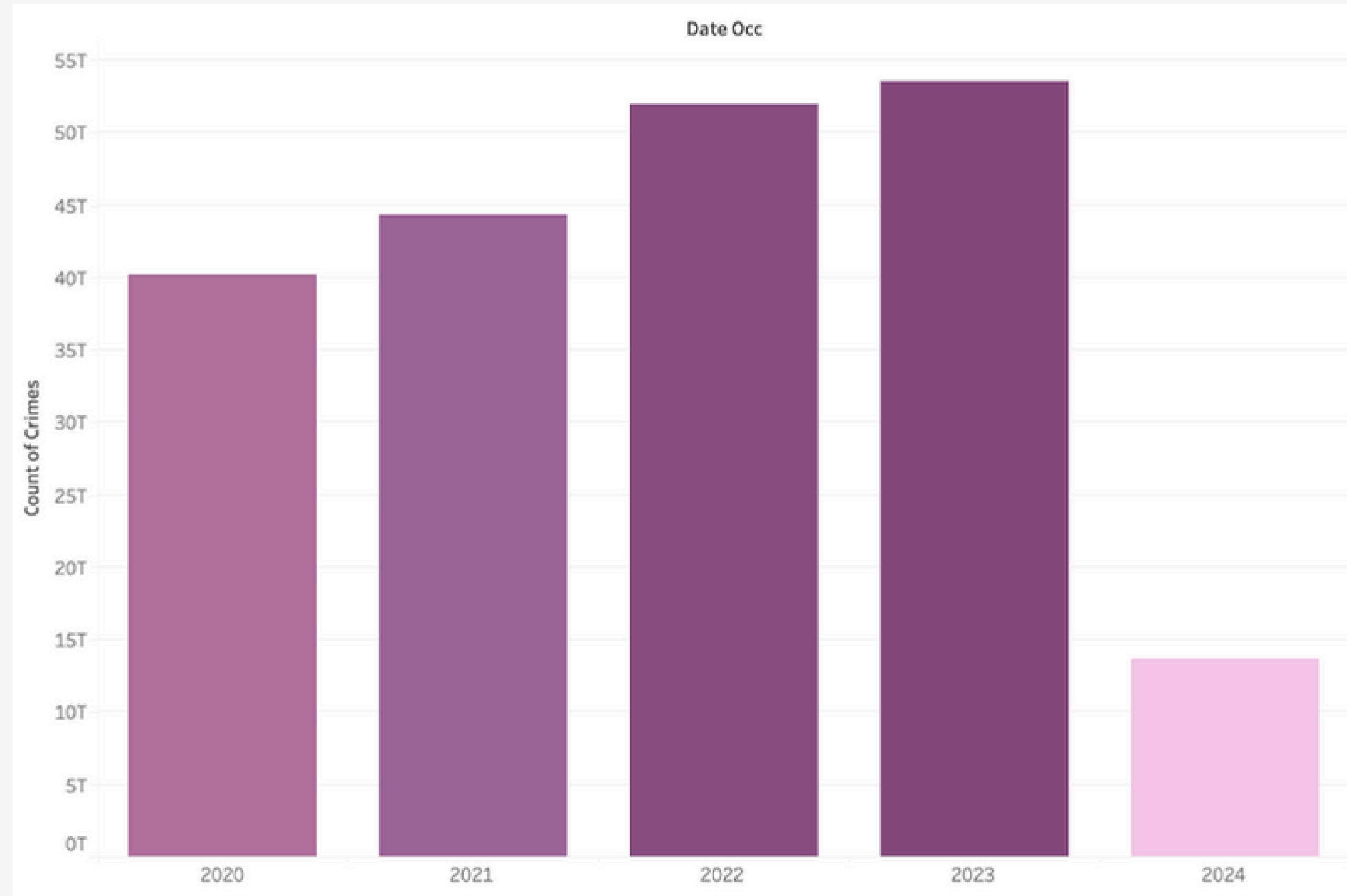
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DR. NO	Date Rptd	DATE OCC	TIME OCC	AREA	AREA NAME	Rpt Dist No	Part 1-2	Crm Cd	Crm Cd Desc	Vict Age	Vict Sex	Vict Desc
190326475	03/01/2020 00:00	03/01/2020 00:00	21:30:00	7	Wilshire	784	1	510	VEHICLE - STOLEN	0	M	O
200106753	02/09/2020 00:00	02/08/2020 20:00:00	18:00:00	1	Central	182	1	330	BURGLARY FROM VEHICLE	47	M	O
200320258	11/11/2020 00:00	11/09/2020 20:00:00	17:00:00	3	Southwest	356	1	480	BIKE - STOLEN	19	X	X
200907217	06/10/2023 00:00	03/01/2020 00:00	20:37:00	9	Van Nuys	964	1	343	SHOPLIFTING-GRAND THEFT (\$950.01 & OVER)	19	M	O
220614831	08/18/2022 12:00:00 A	08/17/2020 12:00:00	12:00:00	6	Hollywood	668	2	354	THEFT OF IDENTITY	28	M	H
231808869	04/04/2023 00:00	12/01/2020 00:00	23:00:00	18	Southeast	1826	2	354	THEFT OF IDENTITY	41	M	H
230110144	04/04/2023 00:00	01/03/2020 00:00	9:00:00	1	Central	182	2	354	THEFT OF IDENTITY	25	M	H
220314085	07/22/2022 12:00:00 A	05/12/2020 00:00	11:10:00	3	Southwest	303	2	354	THEFT OF IDENTITY	27	F	B
231309864	04/28/2023 12:00:00 A	12/09/2020 00:00	14:00:00	13	Newton	1375	2	354	THEFT OF IDENTITY	24	F	B
211904005	12/31/2020 12:00:00 A	12/31/2020 12:00:00	12:20:00	19	Mission	1974	2	624	BATTERY - SIMPLE ASSAULT	26	M	H
221804943	01/21/2022 12:00:00 A	07/01/2020 00:00	13:35:00	18	Southeast	1822	2	354	THEFT OF IDENTITY	26	M	B
221908151	04/12/2022 00:00	10/01/2020 00:00	8:00:00	2	Rampart	1988	1	821	SODOMY/SEXUAL CONTACT B/W PENIS OF ONE	8	F	H
230204214	01/05/2023 00:00	02/01/2020 00:00	1:30:00	10	West	201	2	812	CRM AGNST CHILD (13 OR UNDER) (14-15 & SUSP	7	F	W
221008844	05/06/2022 00:00	11/01/2020 07:00	15:00:00	10	West Valley	1029	1	510	VEHICLE - STOLEN	0		
230207571	03/16/2023 12:00:00 A	01/01/2020 00:00	3:15:00	2	Rampart	271	2	810	SEX/UNLAWFUL/MUTUAL CONSENT, PENETR	13	F	H

- We updated the 'Time Occ' column format from a numerical representation (e.g., 2200) to a more readable time format (e.g., 22:00) to enhance clarity and ease of data interpretation.

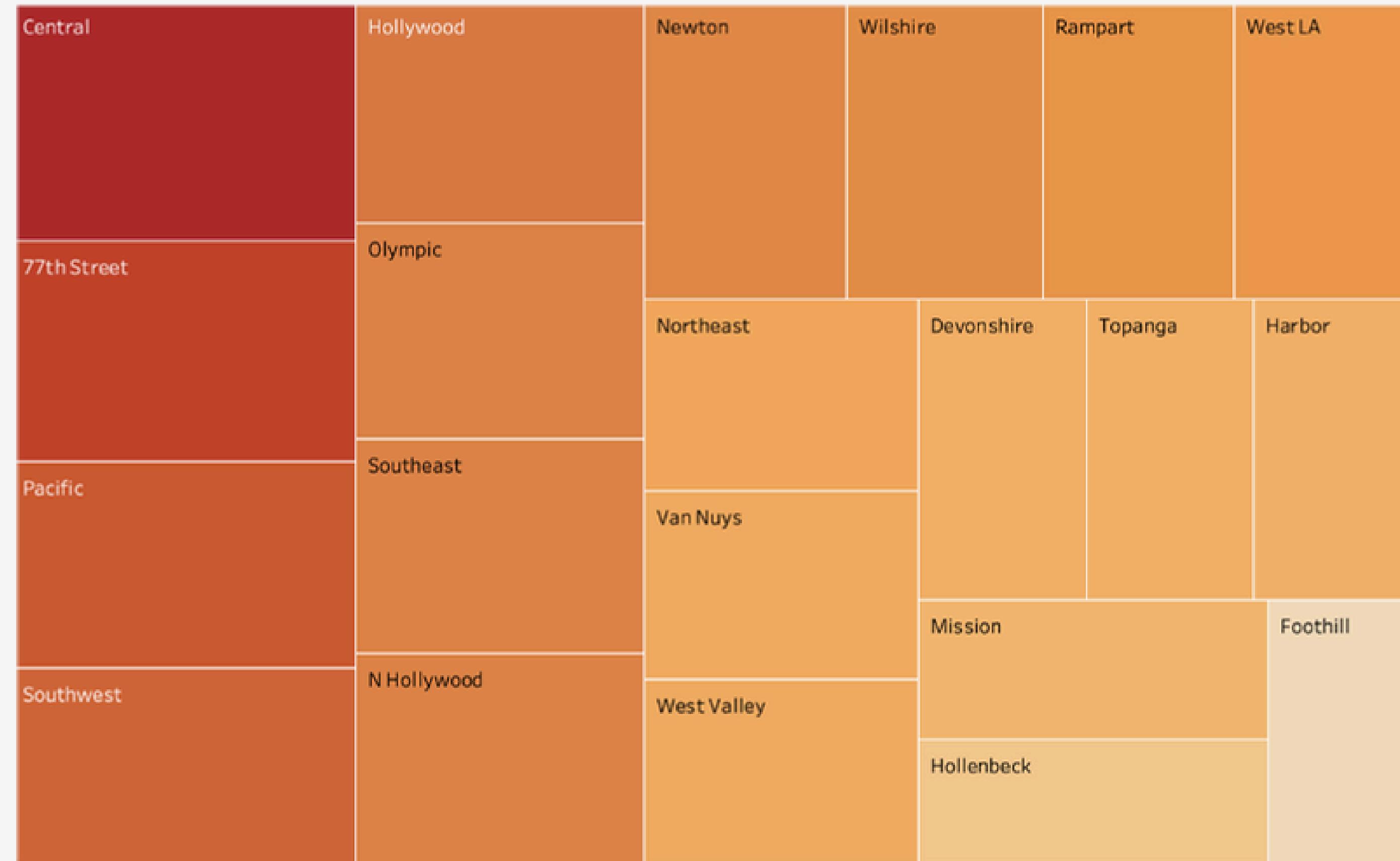
Q1:

How have crime rates changed over time?



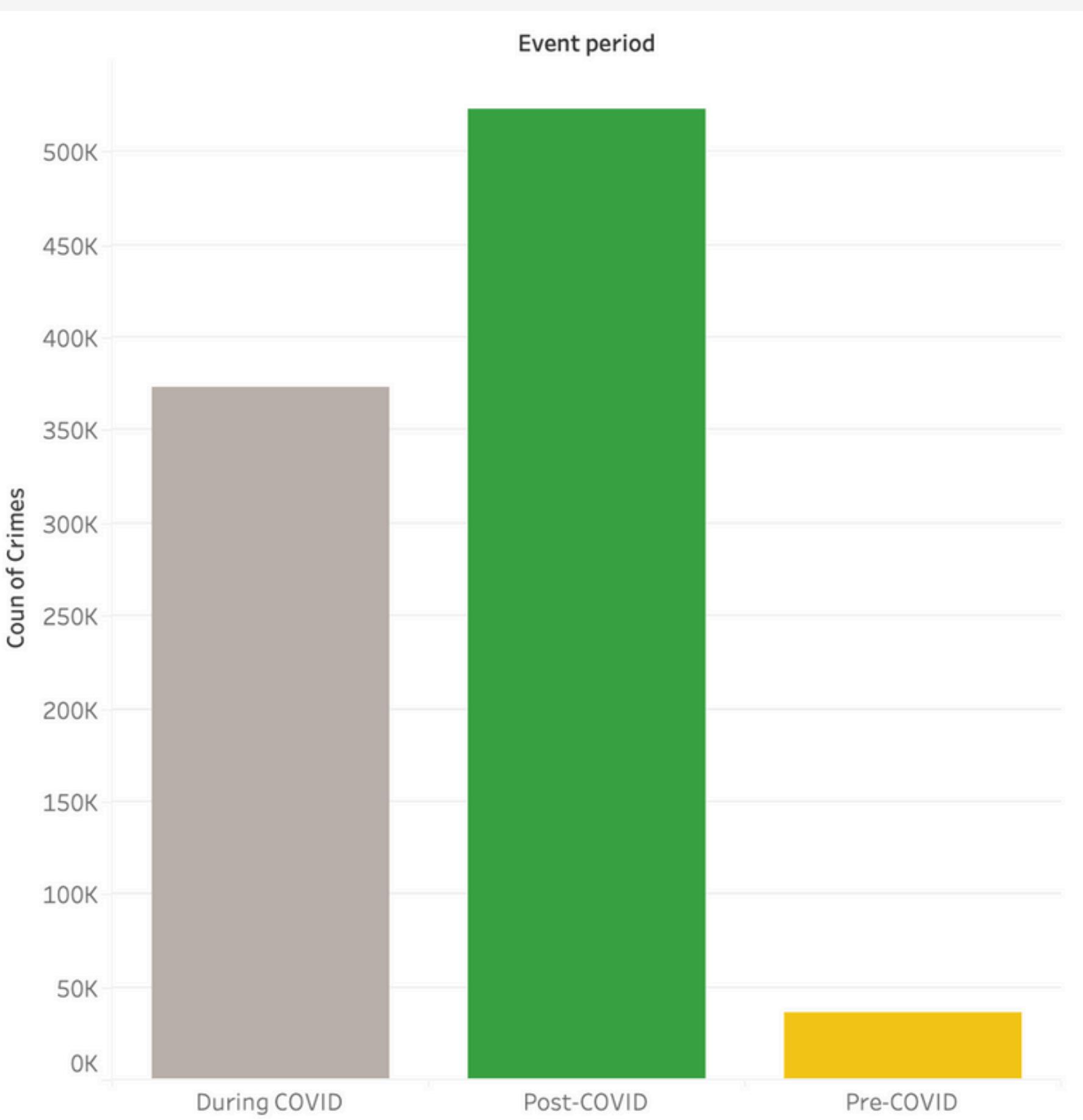
Q2:

2. Which areas in Los Angeles have the highest crime rates?



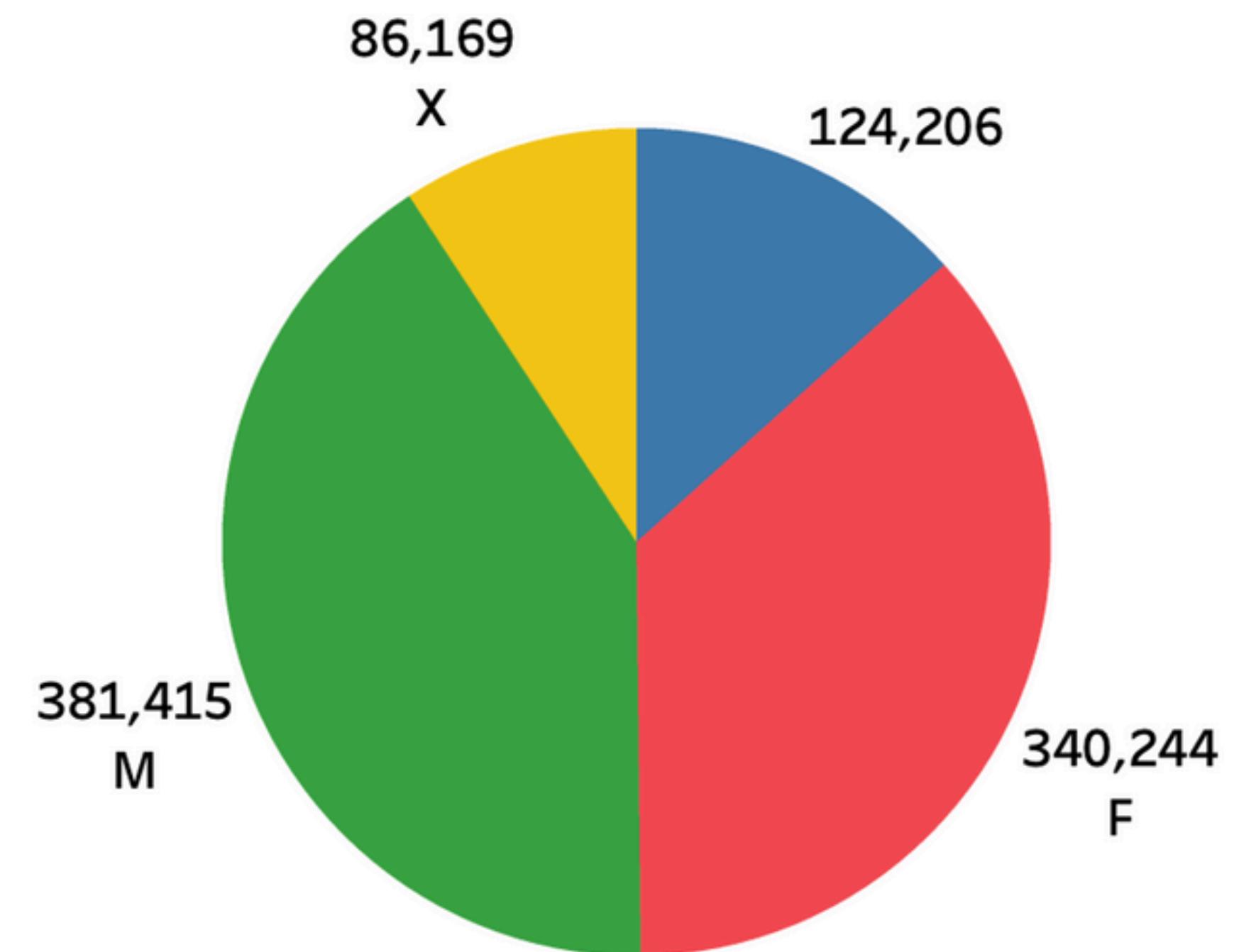
Q3:

3. Did significant events (e.g., COVID-19 pandemic) impact crime rates and types?



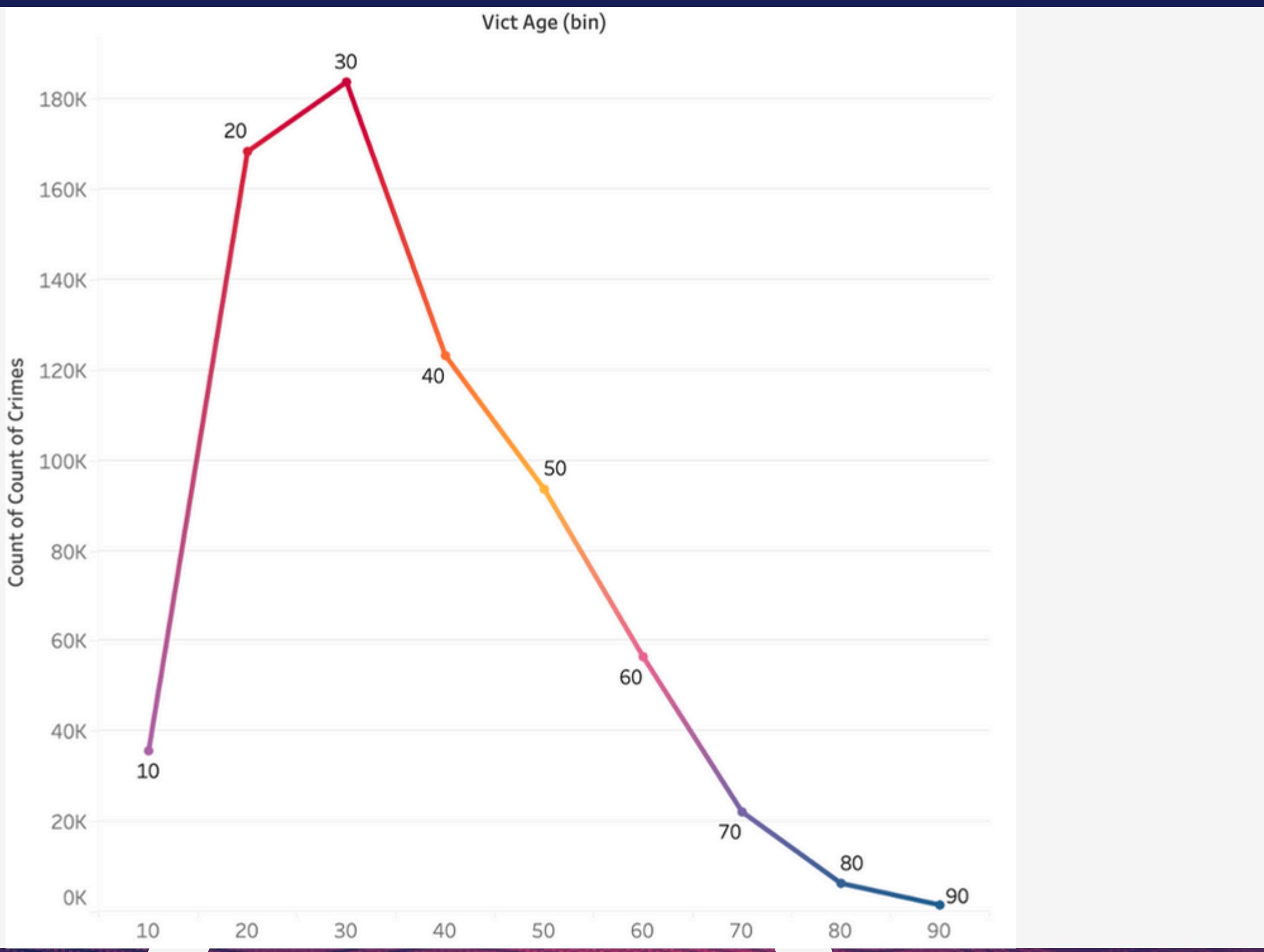
Q4:

What is the distribution of crime incidents by victim's gender?



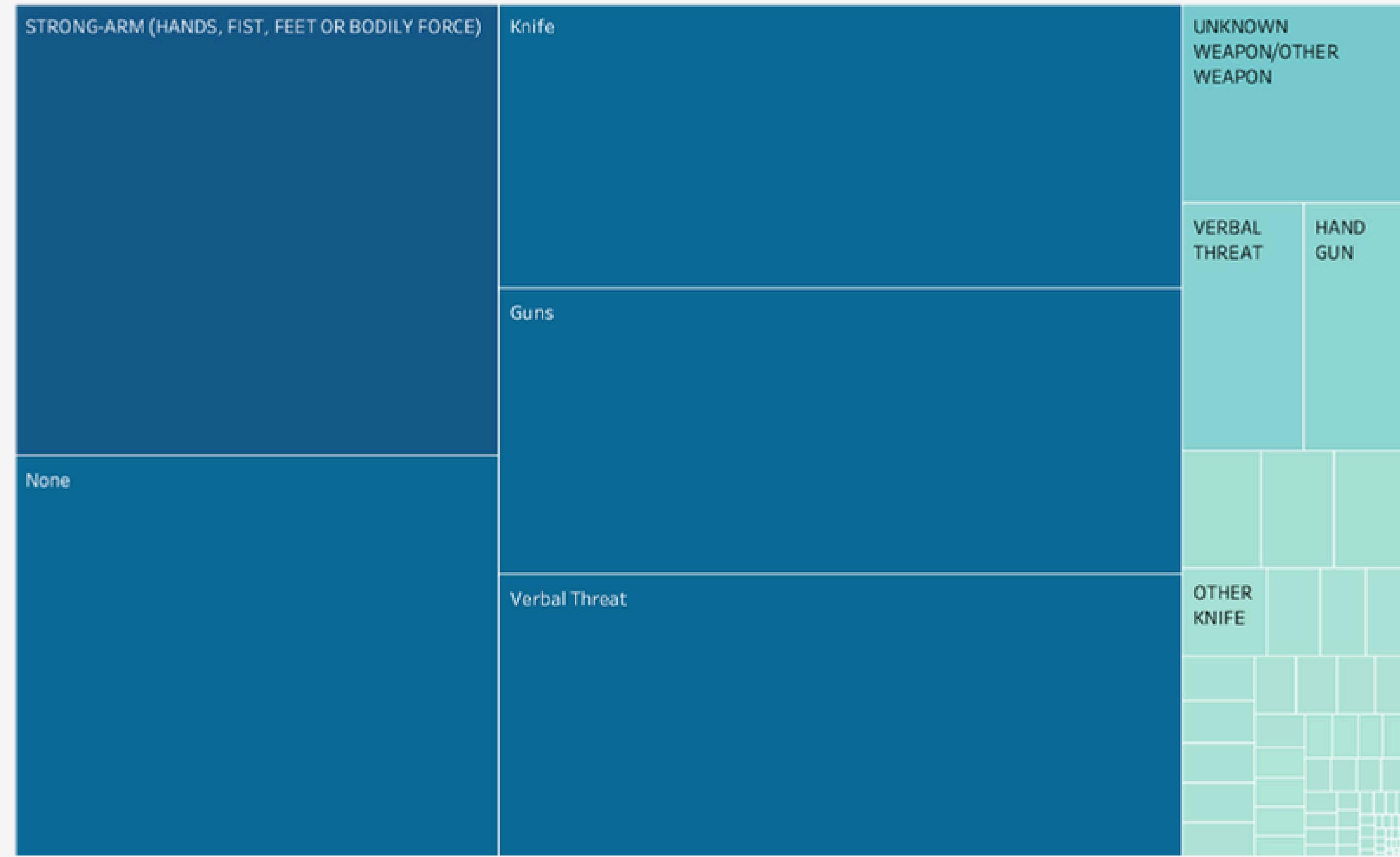
Q5:

What are the age trends among crime victims?



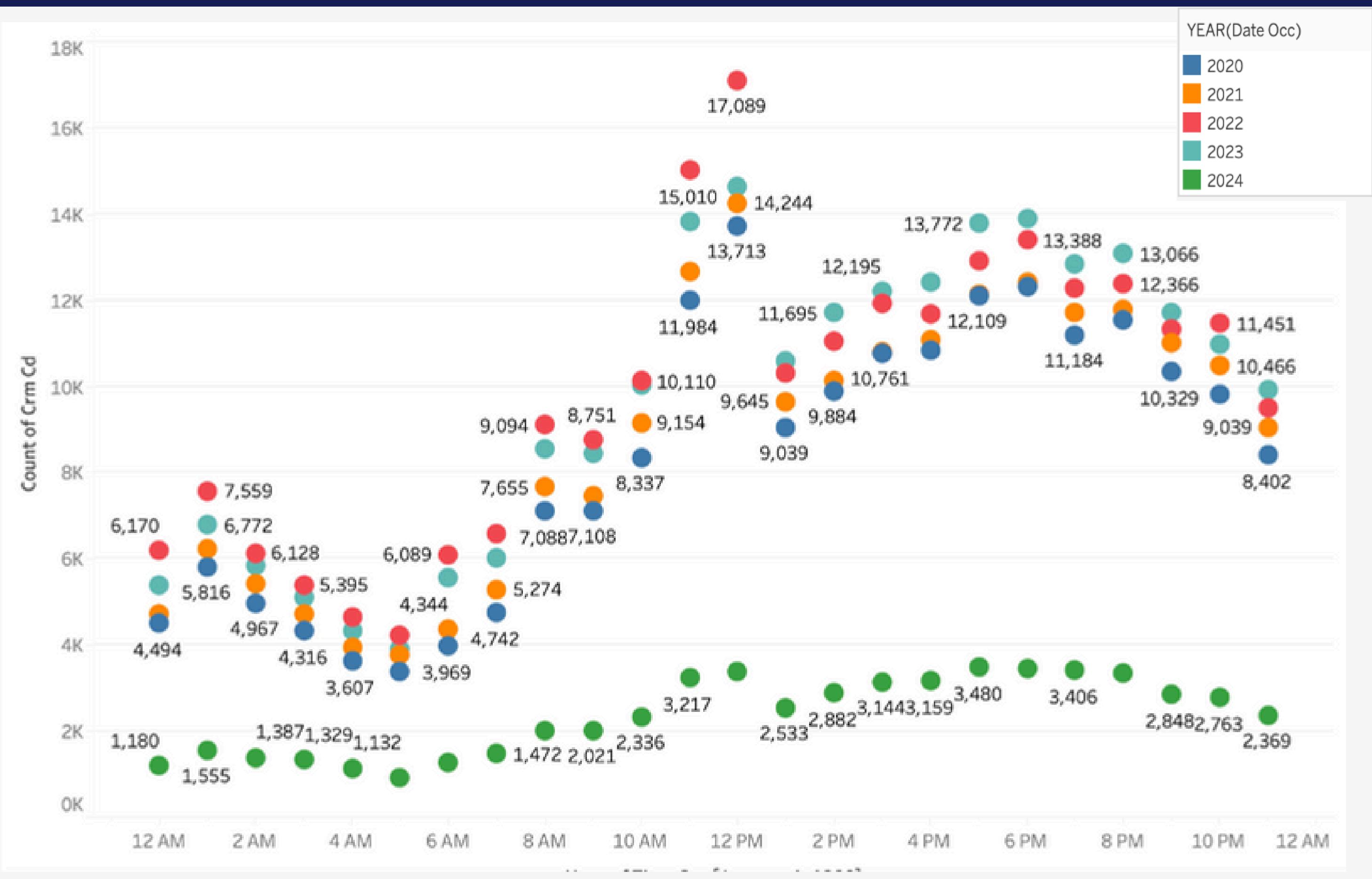
Q6:

How often are different types of weapons used in crimes?



Q7:

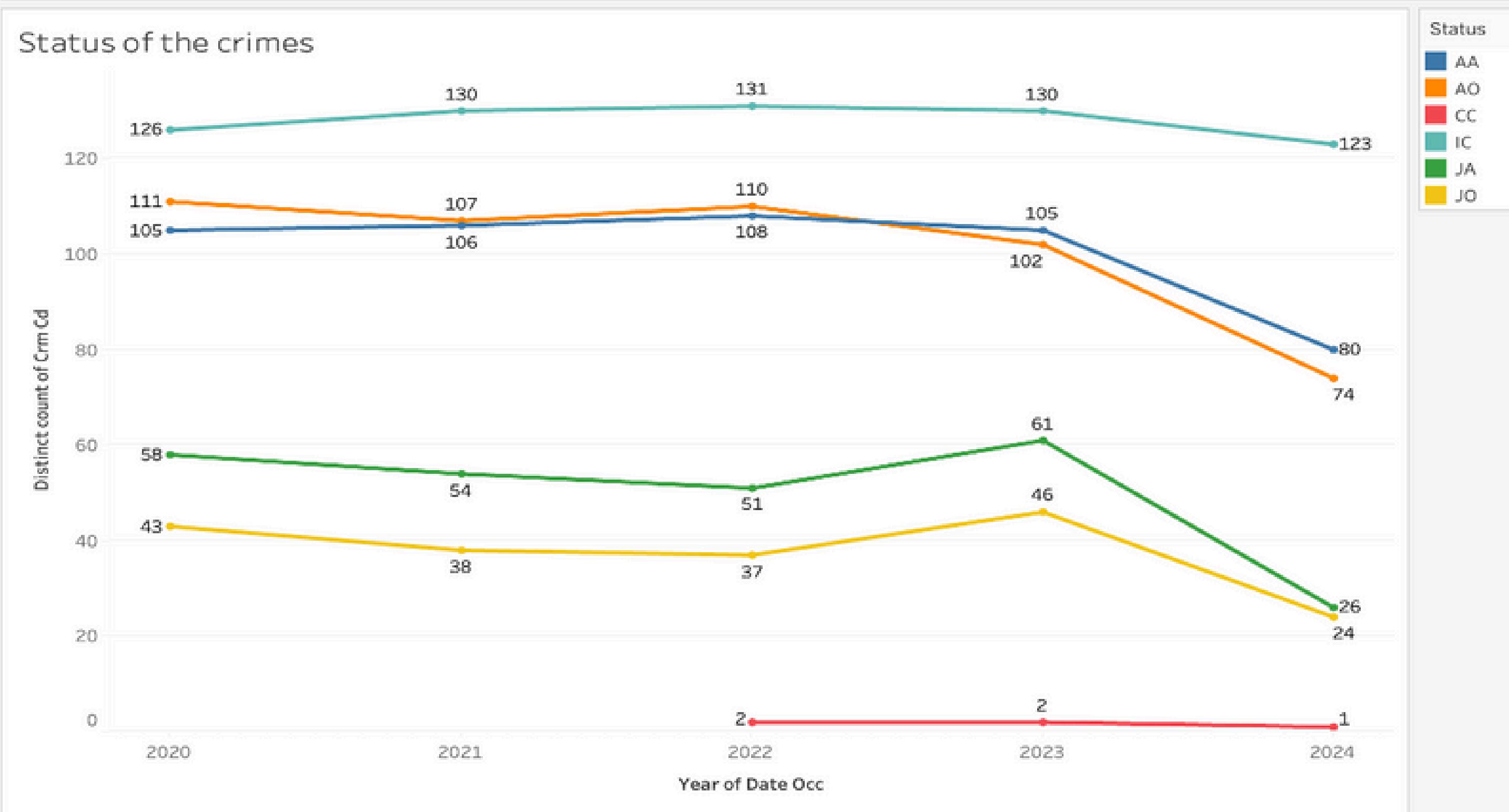
When do crimes most frequently happen?



Q8:

What is the Status of the Crimes?

STATUS OF CRIMES



Q9:

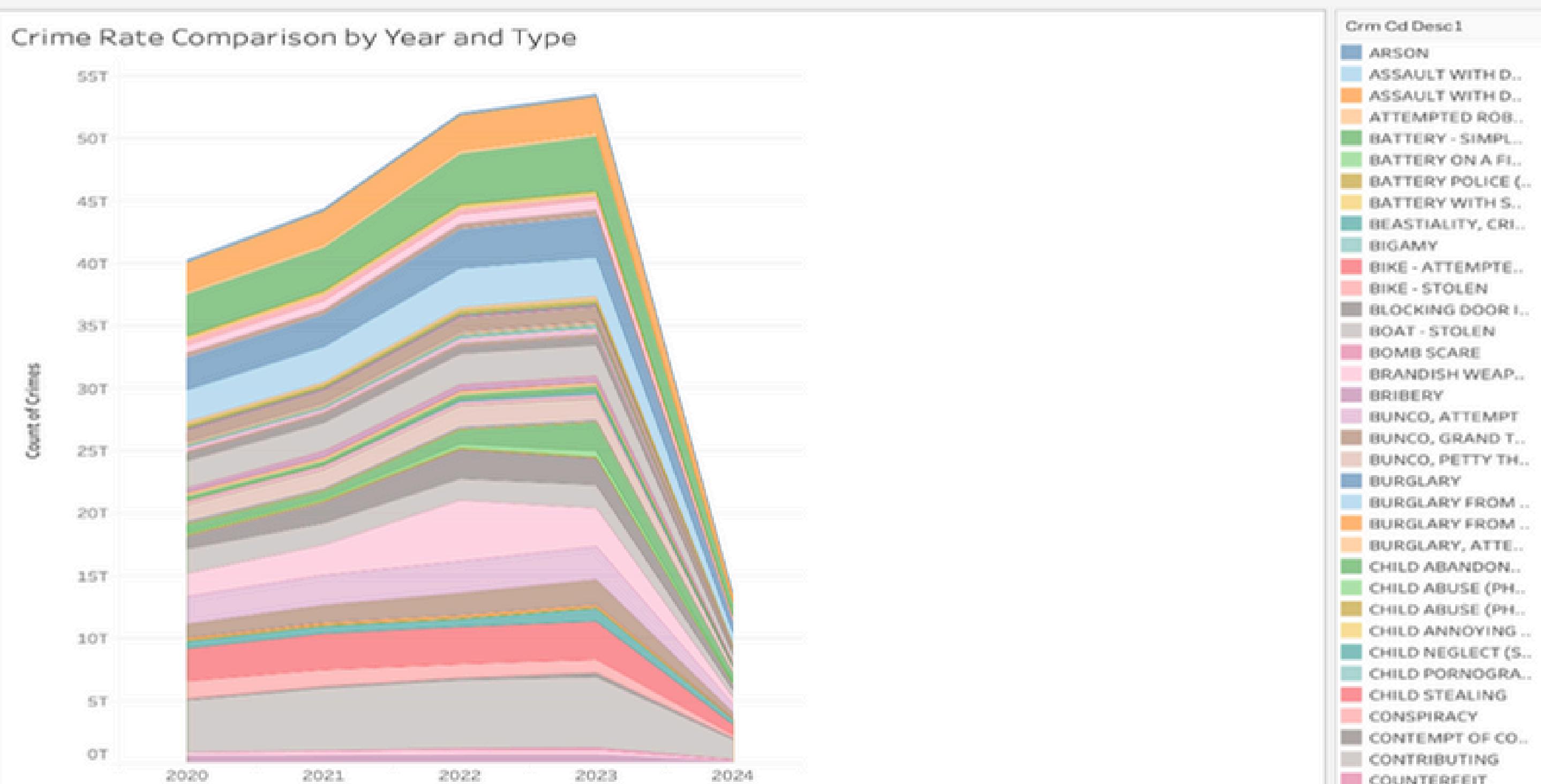
Is there any correlation between time of day and type of the crime committed?

Is there a correlation between time of day and the type of crime committed?

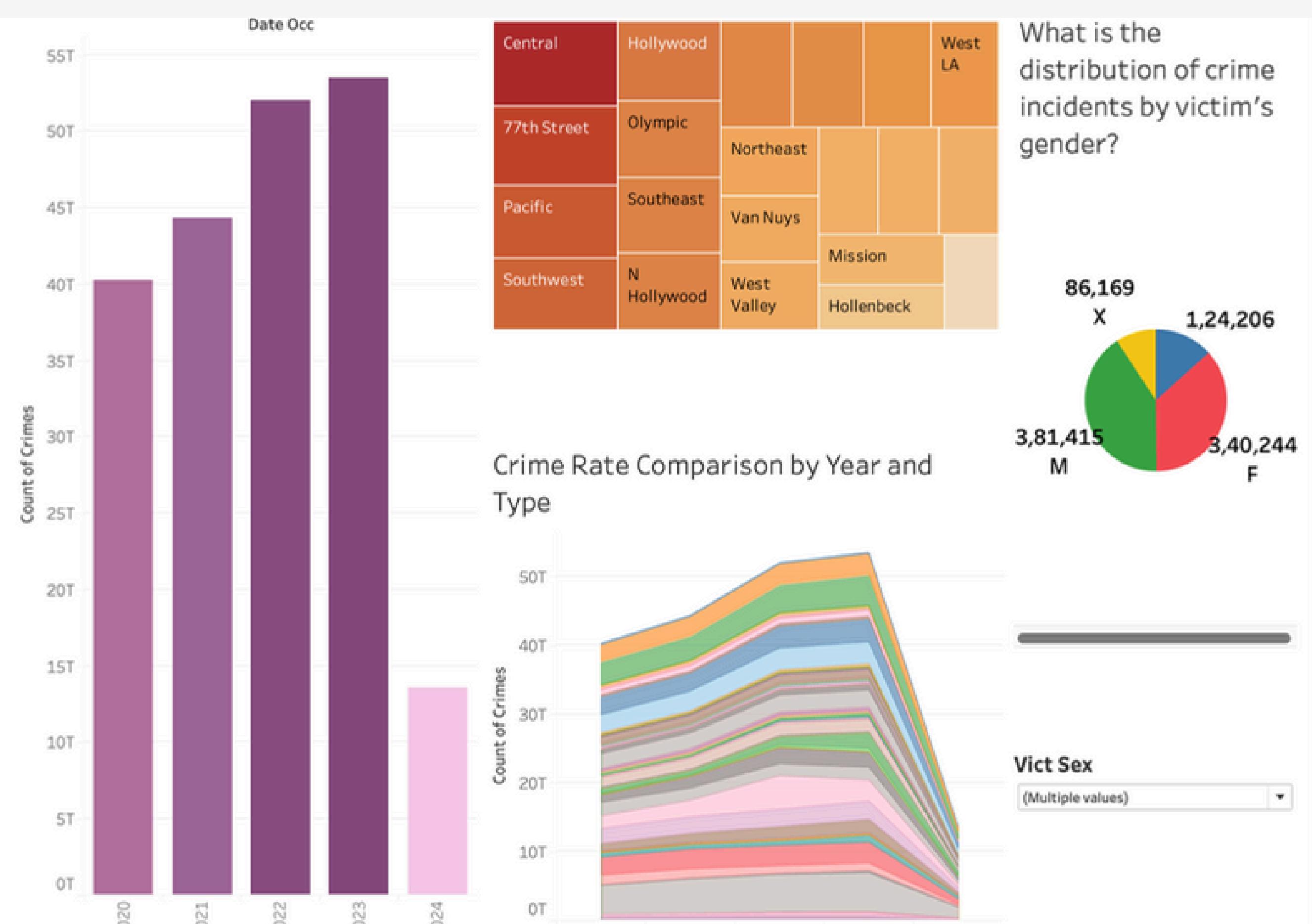
Q10:

Crime rate Comparison by Year and Type

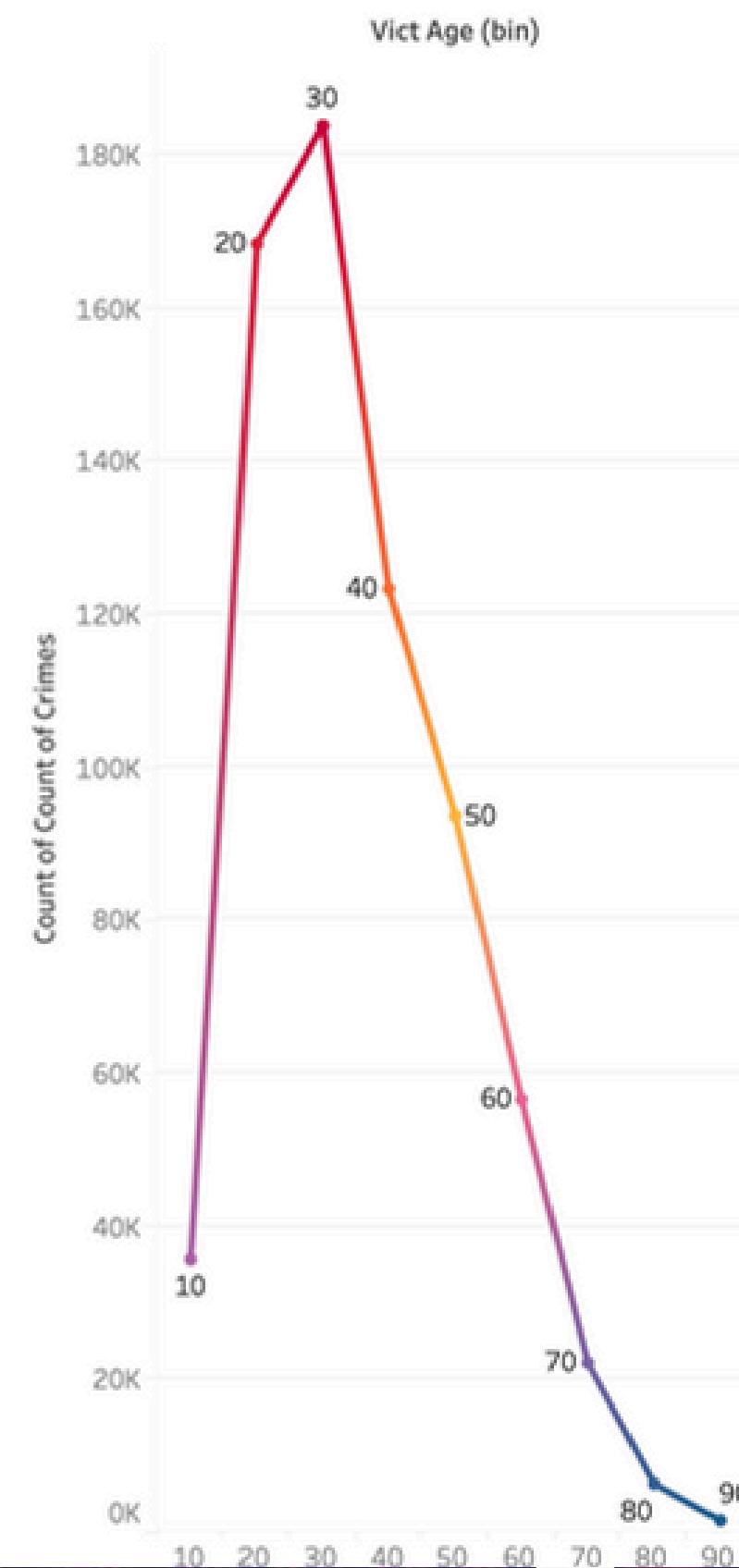
Crime Rate Comparison by Year and Type



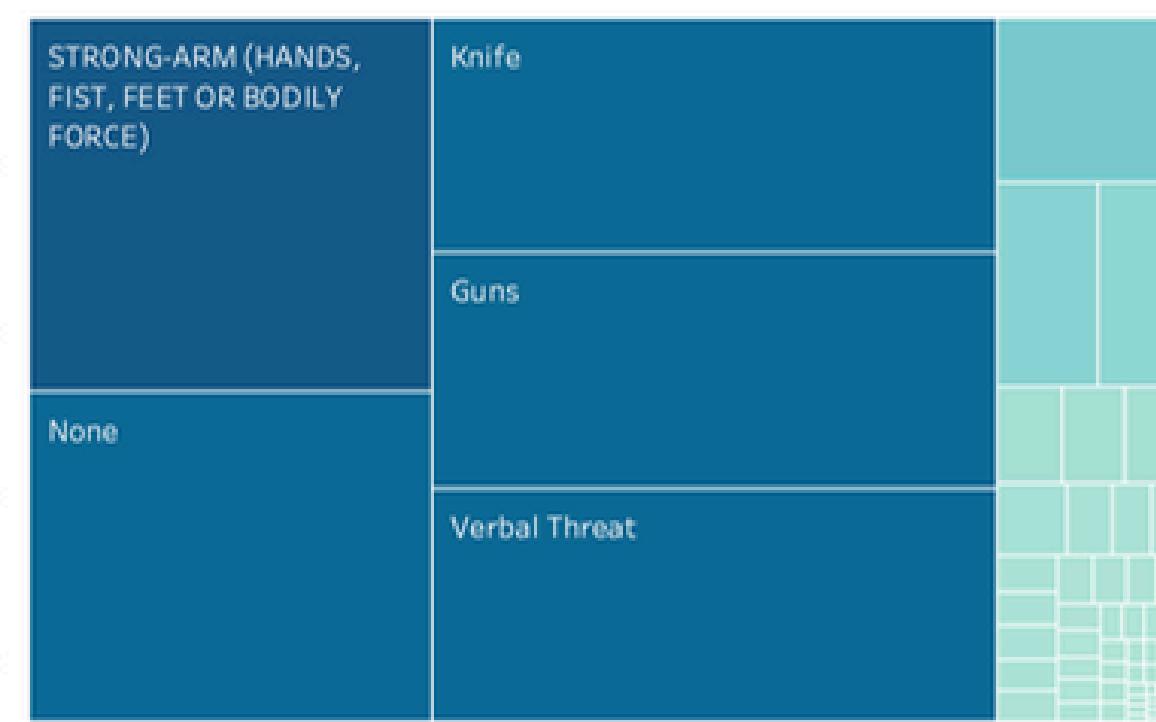
DASHBOARDS



What are the age trends among crime victims?



How often are different types of weapons used in crimes?



Count of Count of Crimes

1,568 1,83,831

Year of Date Occ

(All)

Year of Date Occ

2020

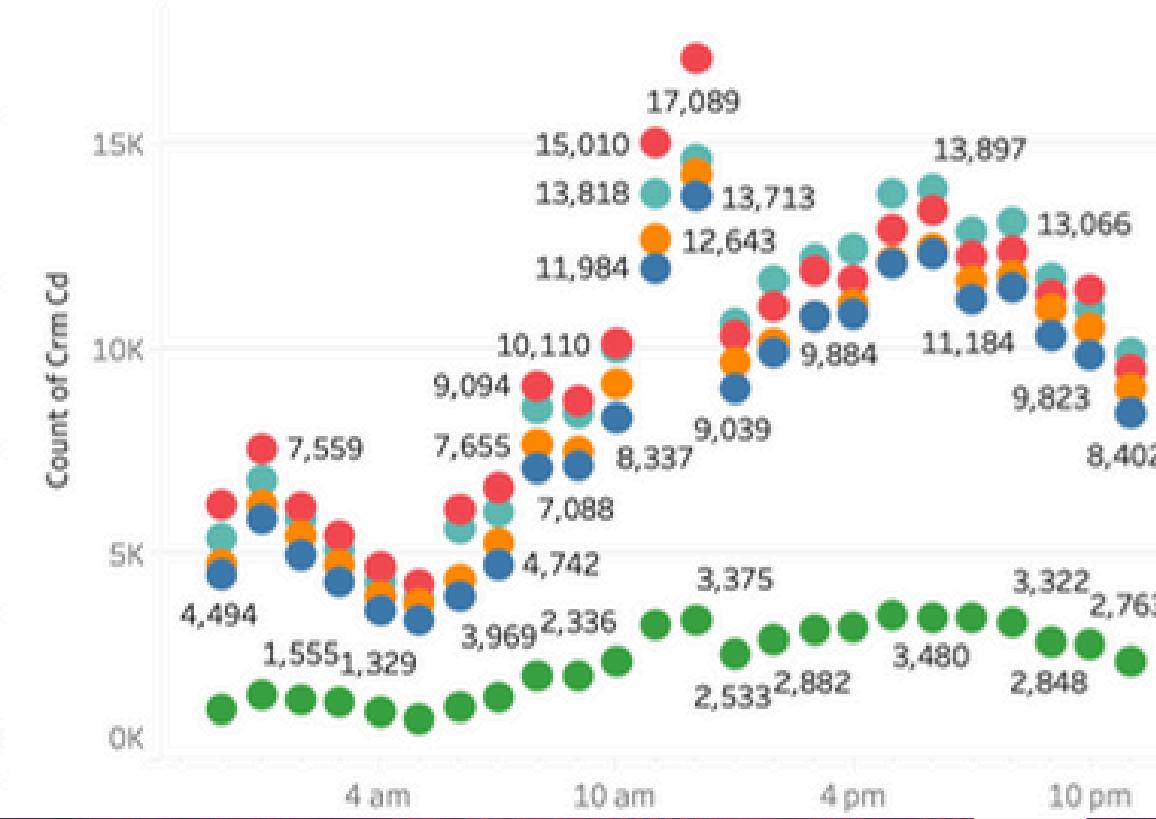
2021

2022

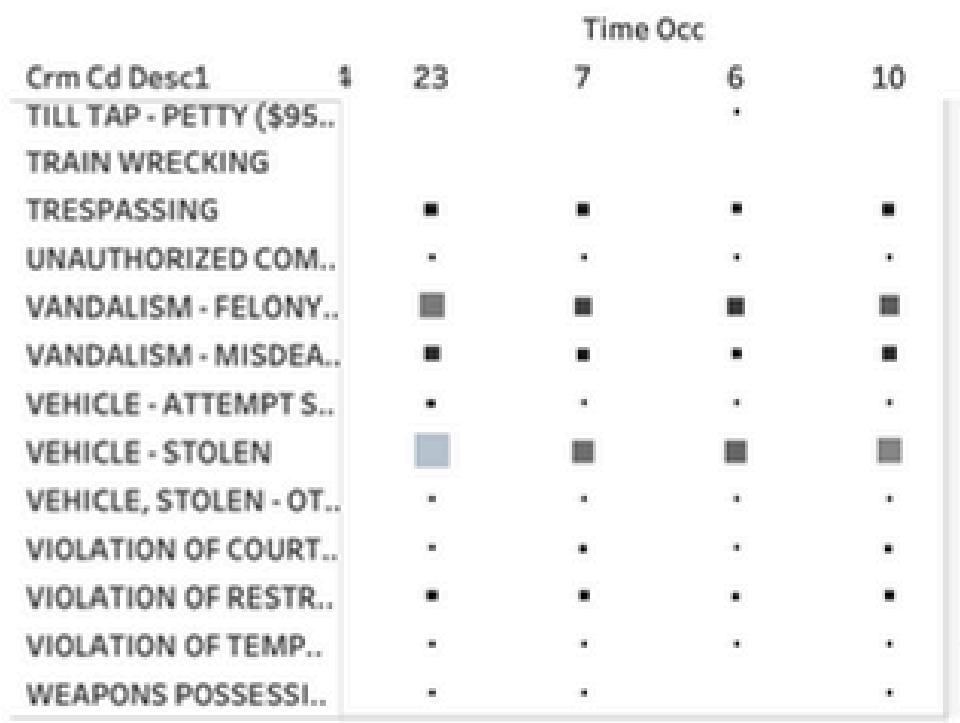
2023

2024

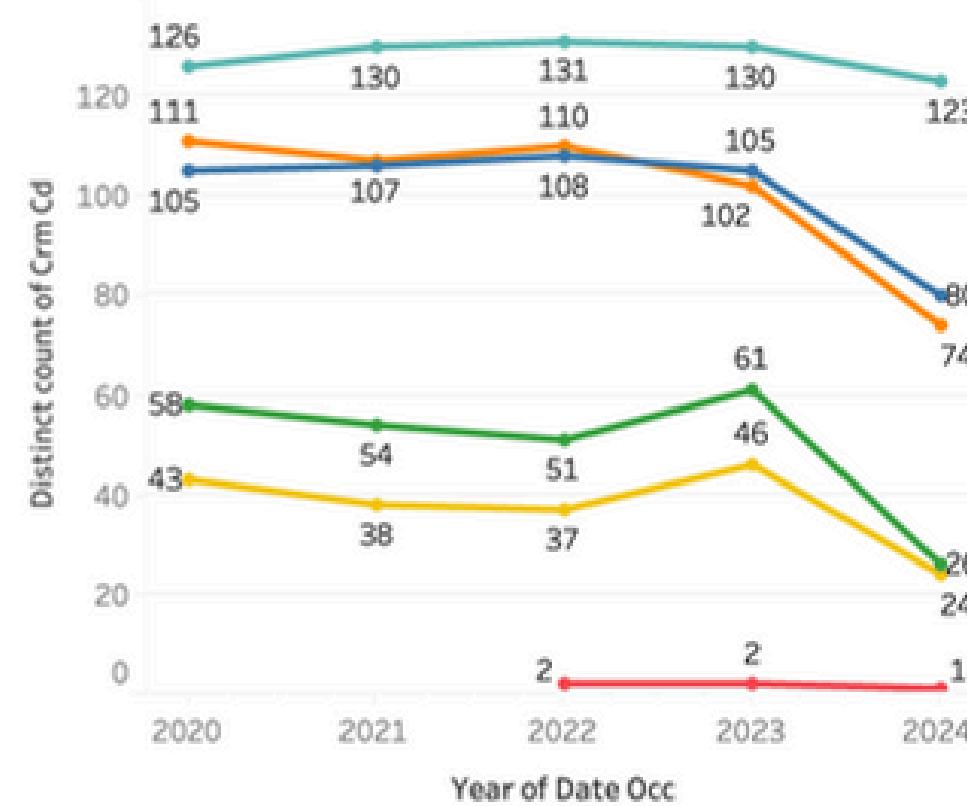
When do crimes most frequently happen?



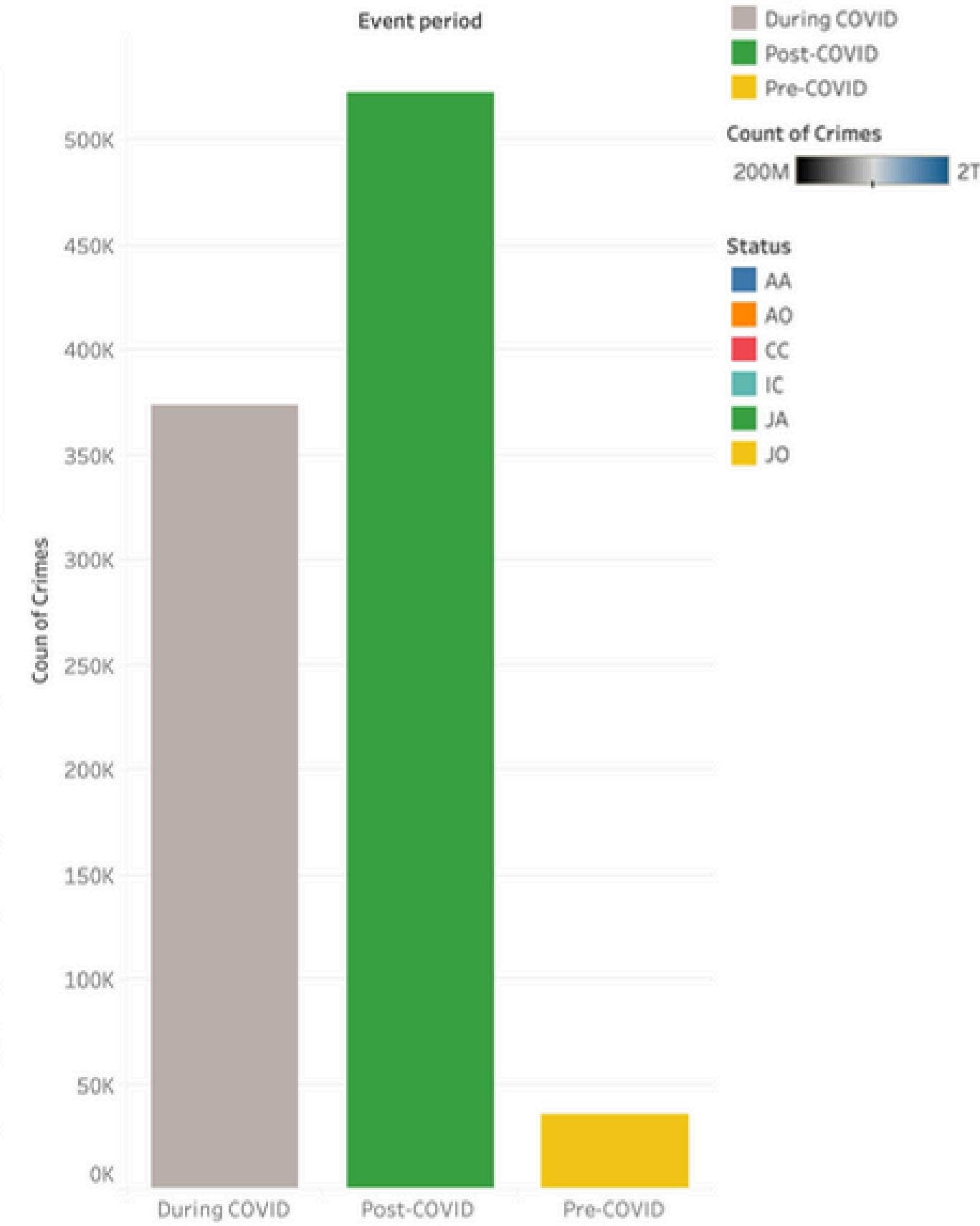
Is there a correlation between time of day and the type of crime committed?



Status of the crimes



Did significant events (e.g., COVID-19 pandemic) impact crime rates and types?



CONCLUSION

LIMITATIONS AND FUTURE DIRECTIONS:

ACCURACY OF SPATIAL DATA: BY INCORPORATING MORE EXACT GEOGRAPHIC INFORMATION SYSTEMS, FUTURE RESEARCH MAY BE ABLE TO RECTIFY CERTAIN INACCURACIES IN LOCATION DATA.

LONGITUDINAL STUDIES: FURTHER INVESTIGATION MAY BE NECESSARY TO ASSESS THE LONG-TERM VIABILITY

OF CRIME PREVENTION MEASURES PUT IN PLACE IN RESPONSE TO THESE DISCOVERIES.

LESSONS LEARNED:

THE SIGNIFICANCE OF THOROUGH DATA PREPARATION AND CLEANING IN BIG DATASETS.

THE EFFICIENCY WITH WHICH VISUAL AIDS CAN COMMUNICATE COMPLEX DATA INSIGHTS TO A VARIETY OF AUDIENCES.



A large, semi-transparent blue sphere is centered in the middle of the slide. Behind it, several thin, red, wavy lines form a grid-like pattern. Three solid red circles of varying sizes are positioned on the left, right, and top edges of the sphere.

THANK YOU!