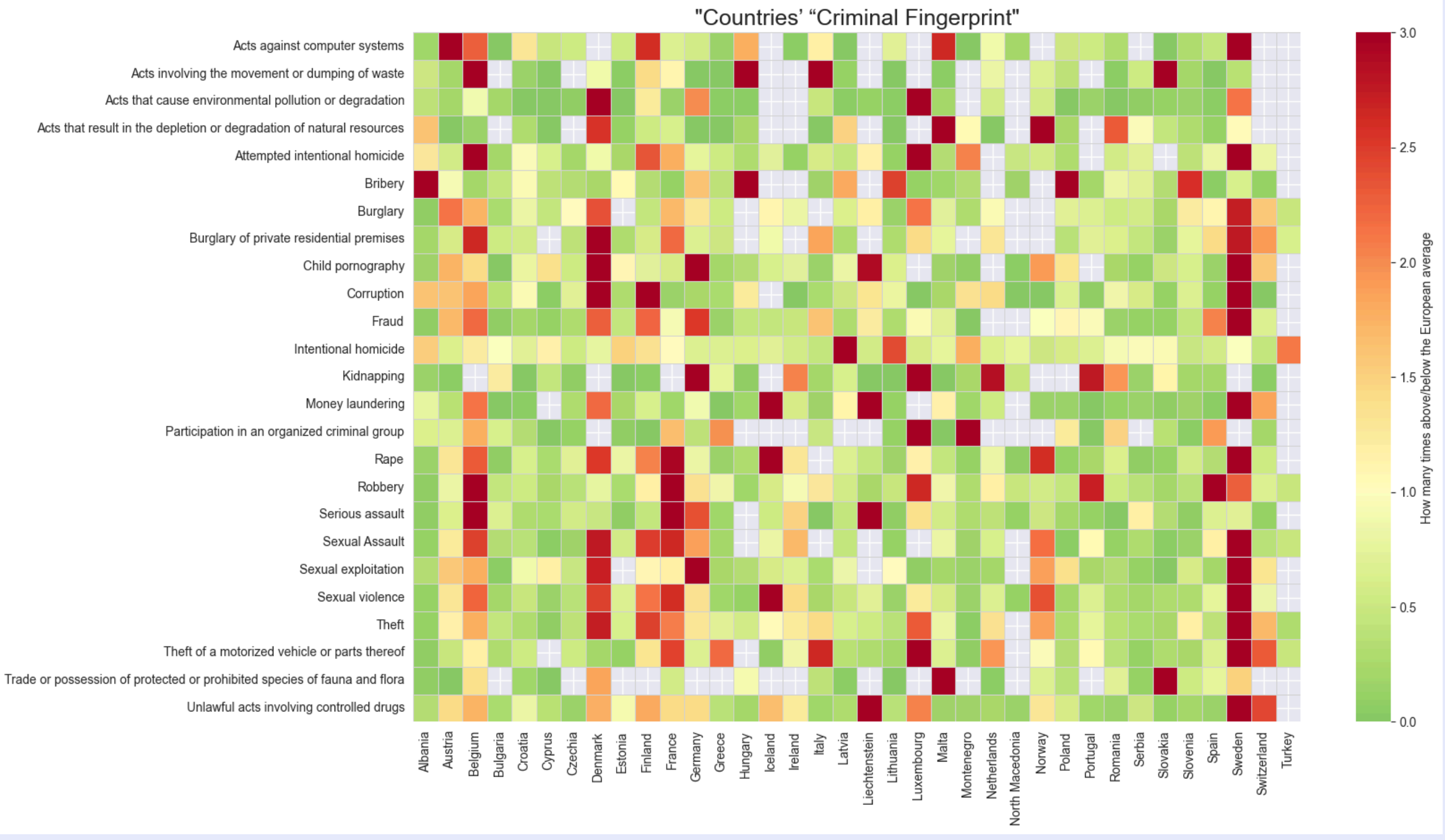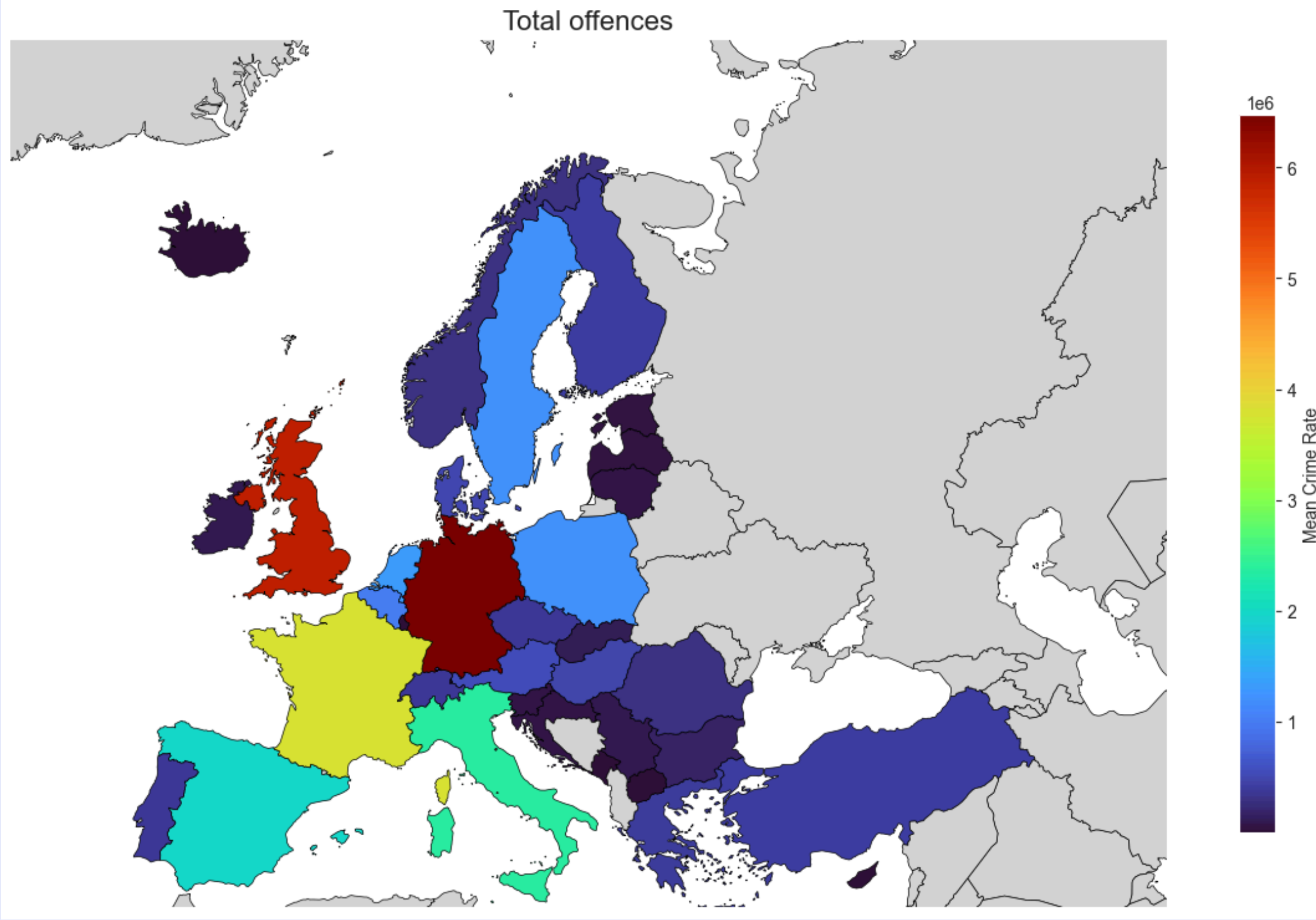# Crime Analysis in Europe

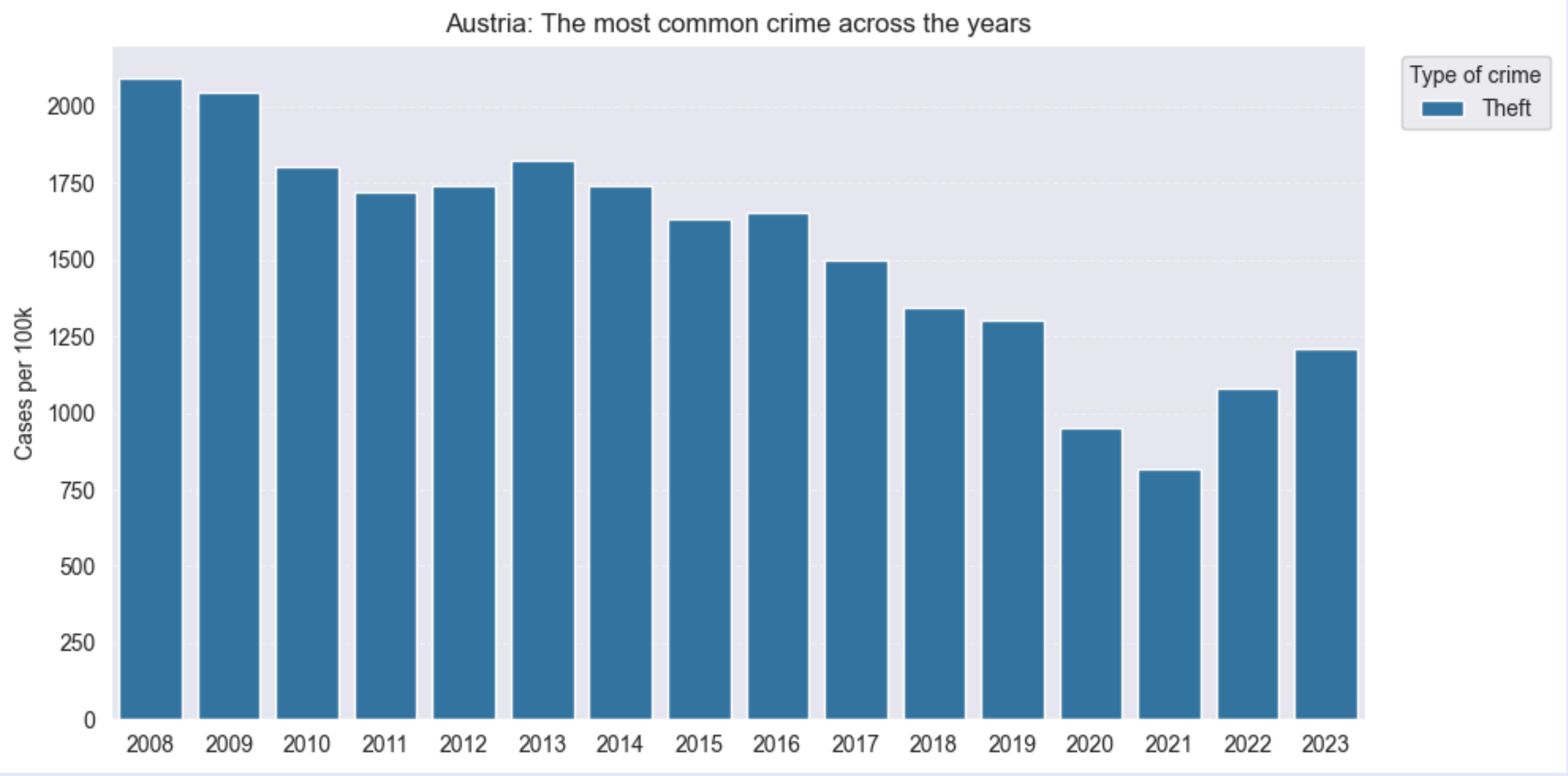**Group-B5: Anastassia Käärmann, Helena Angela Kiisler, Kirke Kisand**

This project explores crime trends across European countries using publicly available data from Eurostat.
The objective was to apply core data science skills to produce meaningful insights about crime patterns from mainly 2008–2023, but also using historic data from 1993-2007.
The project uses crime categories defined by the ICCS (International Classification of Crime Statistics) framework, allowing consistent comparison across regions and years.
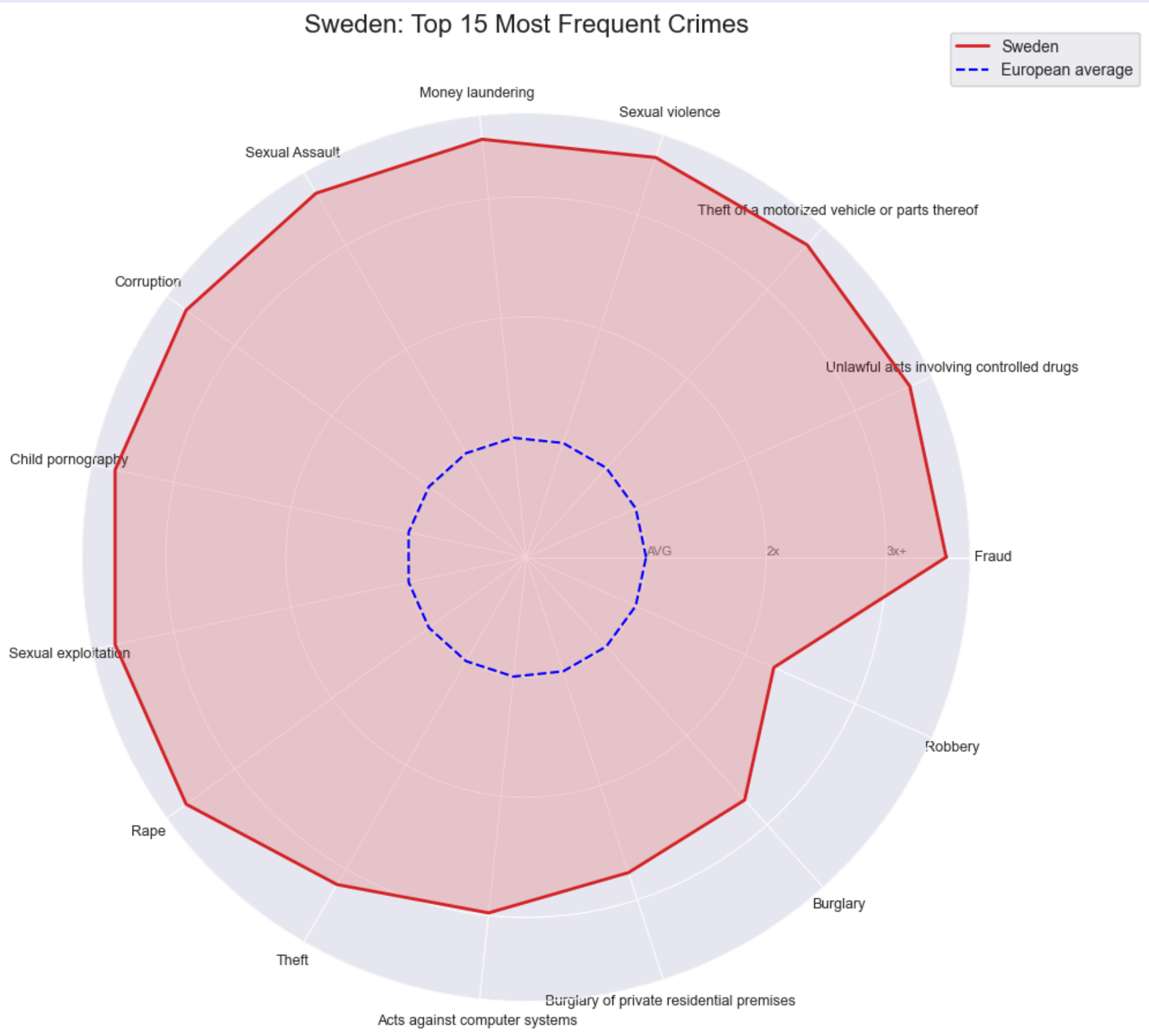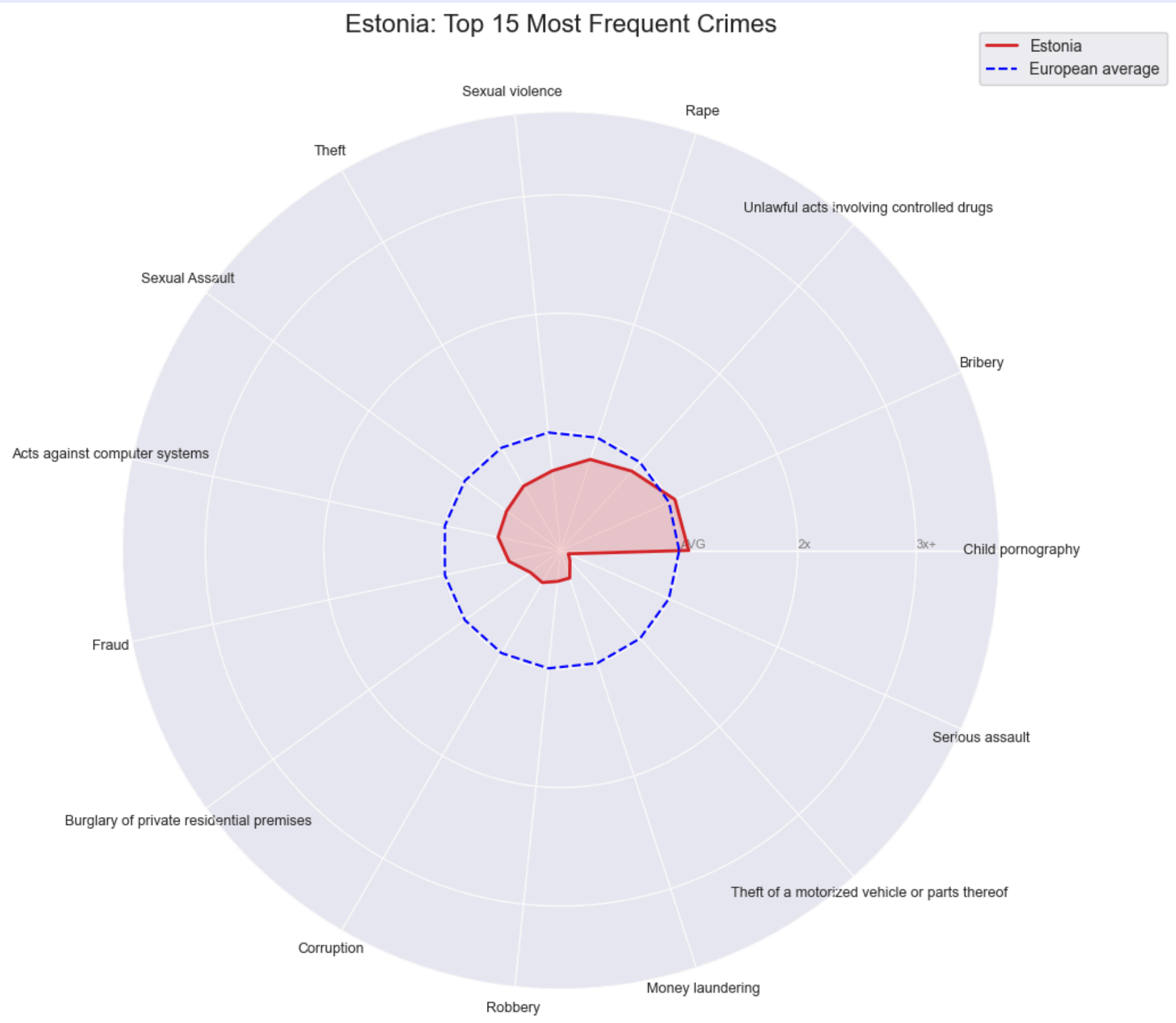
Total offences

To reach our goals, we used exploratory data analysis methods, including data cleaning, handling missing values and generating descriptive statistics. We applied visual analytics such as line plots, bar charts, heatmaps, and comparative trend visualizations to identify long-term trends, patterns, and anomalies in the crime data.
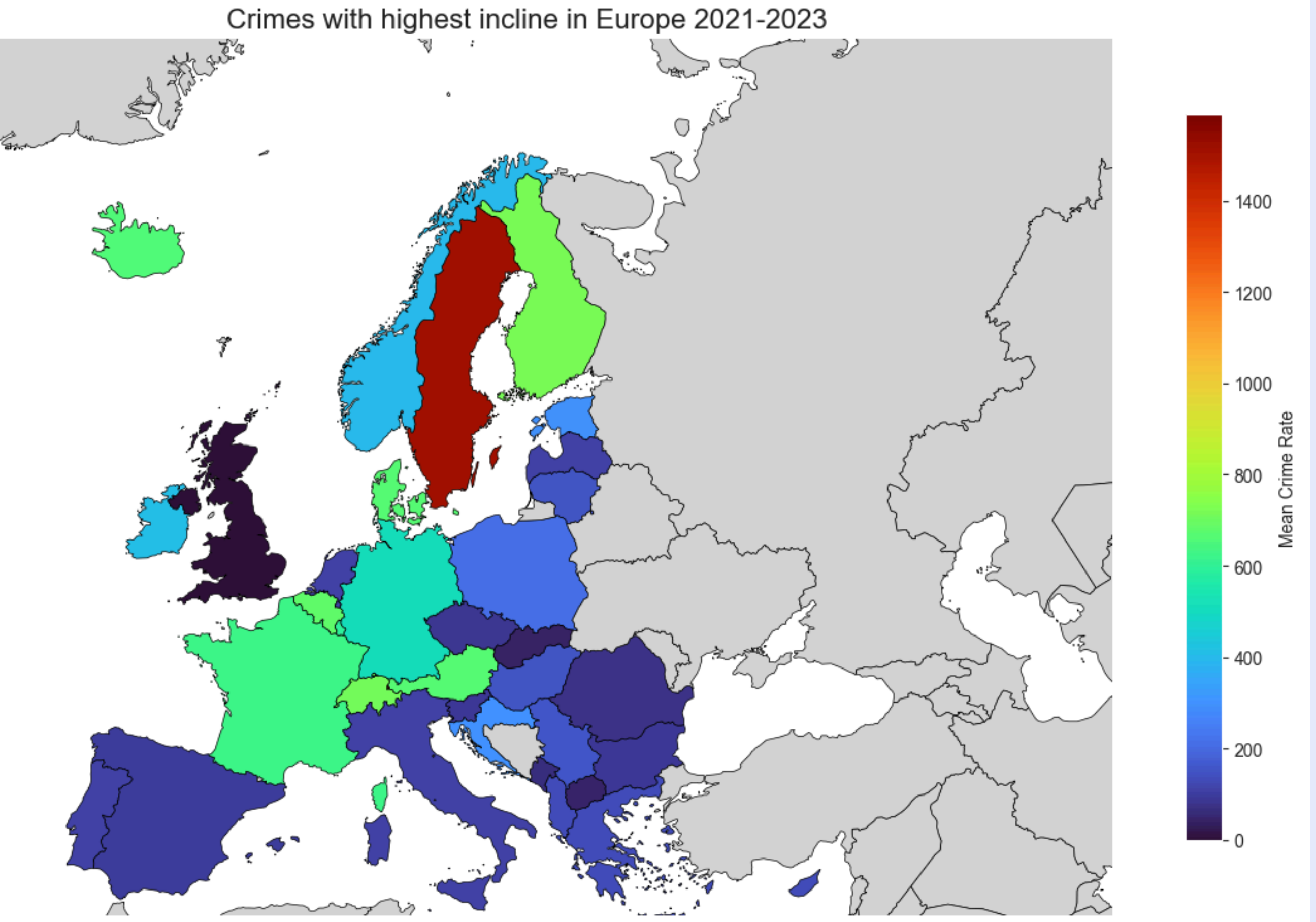
The datasets used were Eurostat crime and criminal justice datasets, mainly "Police-recorded offences by NUTS 3 region" and "Police-recorded offences by offence category".
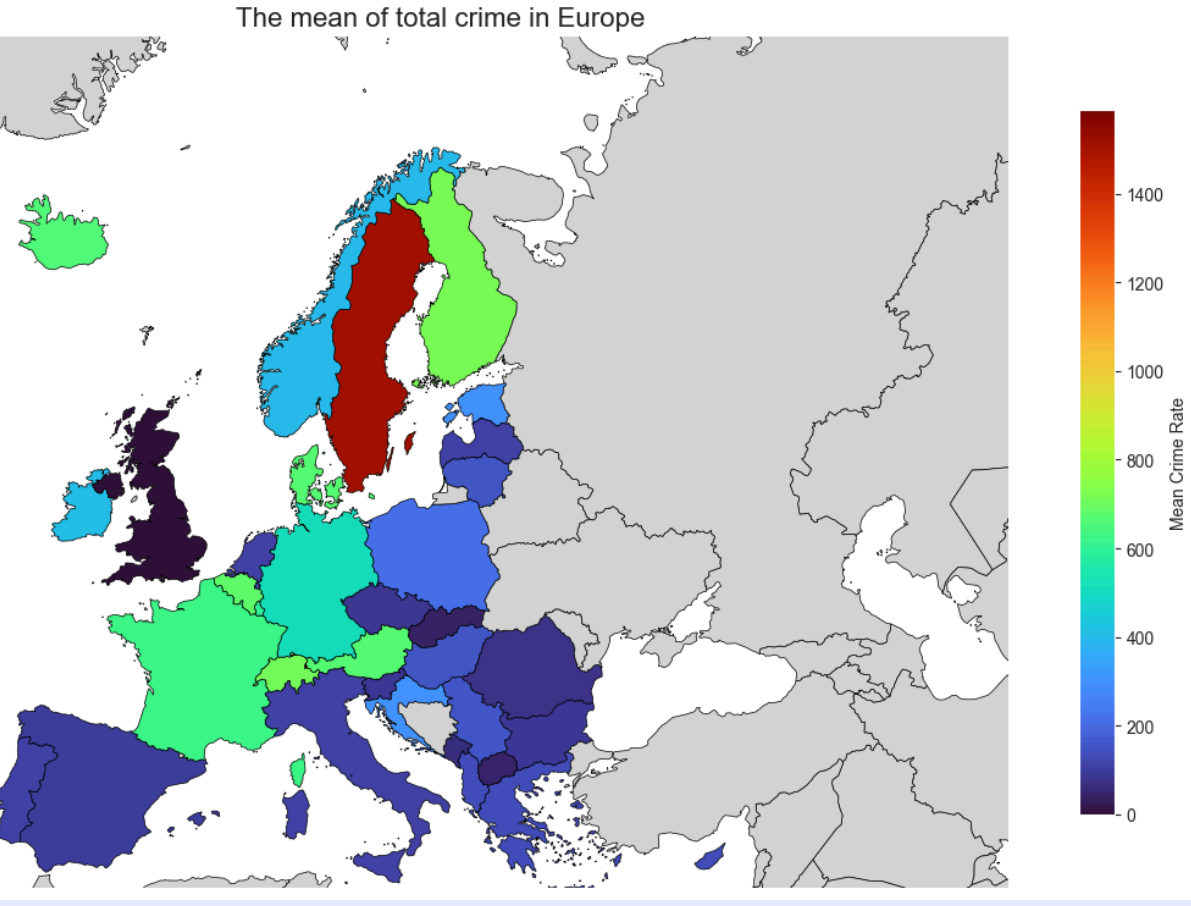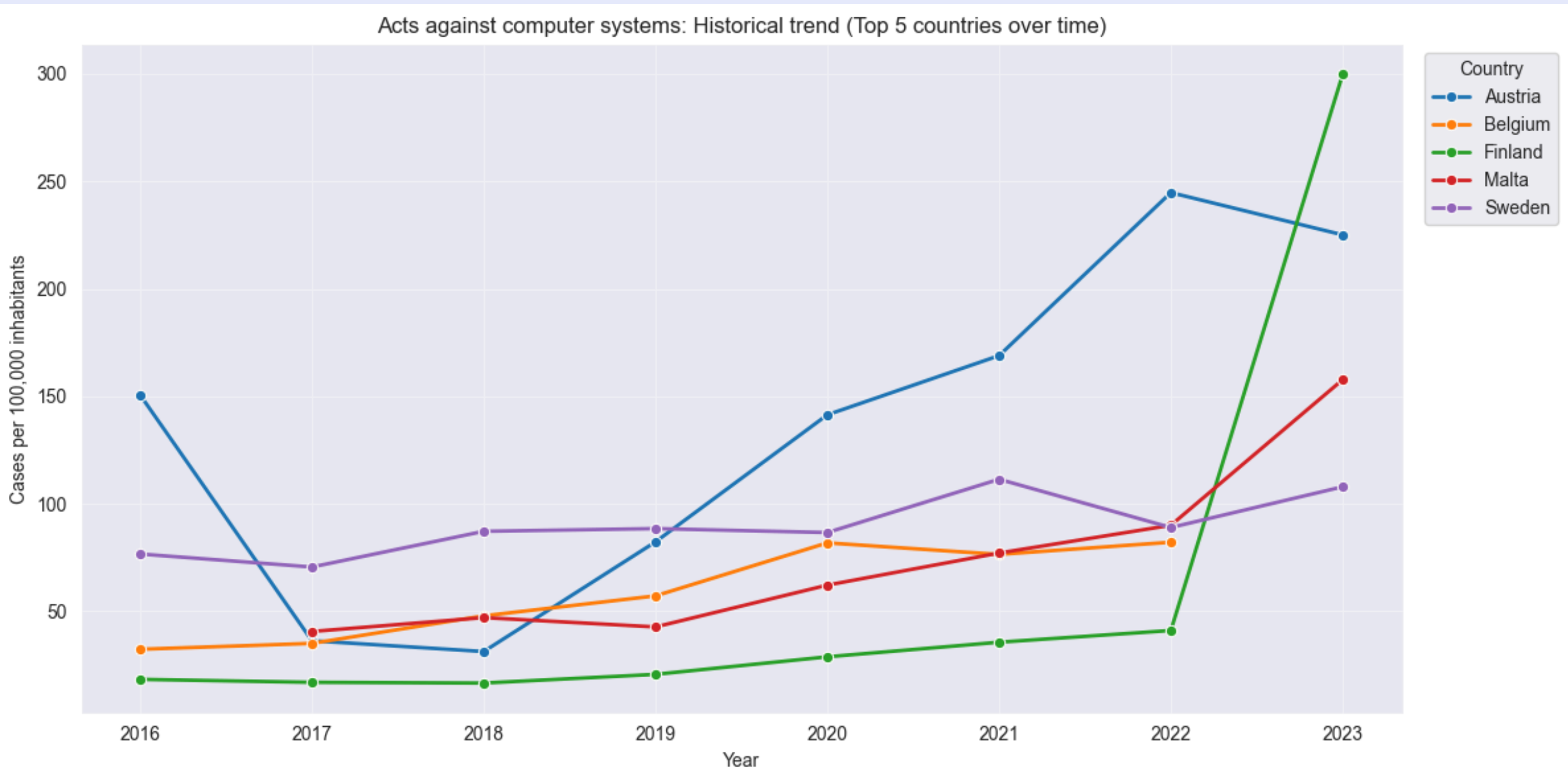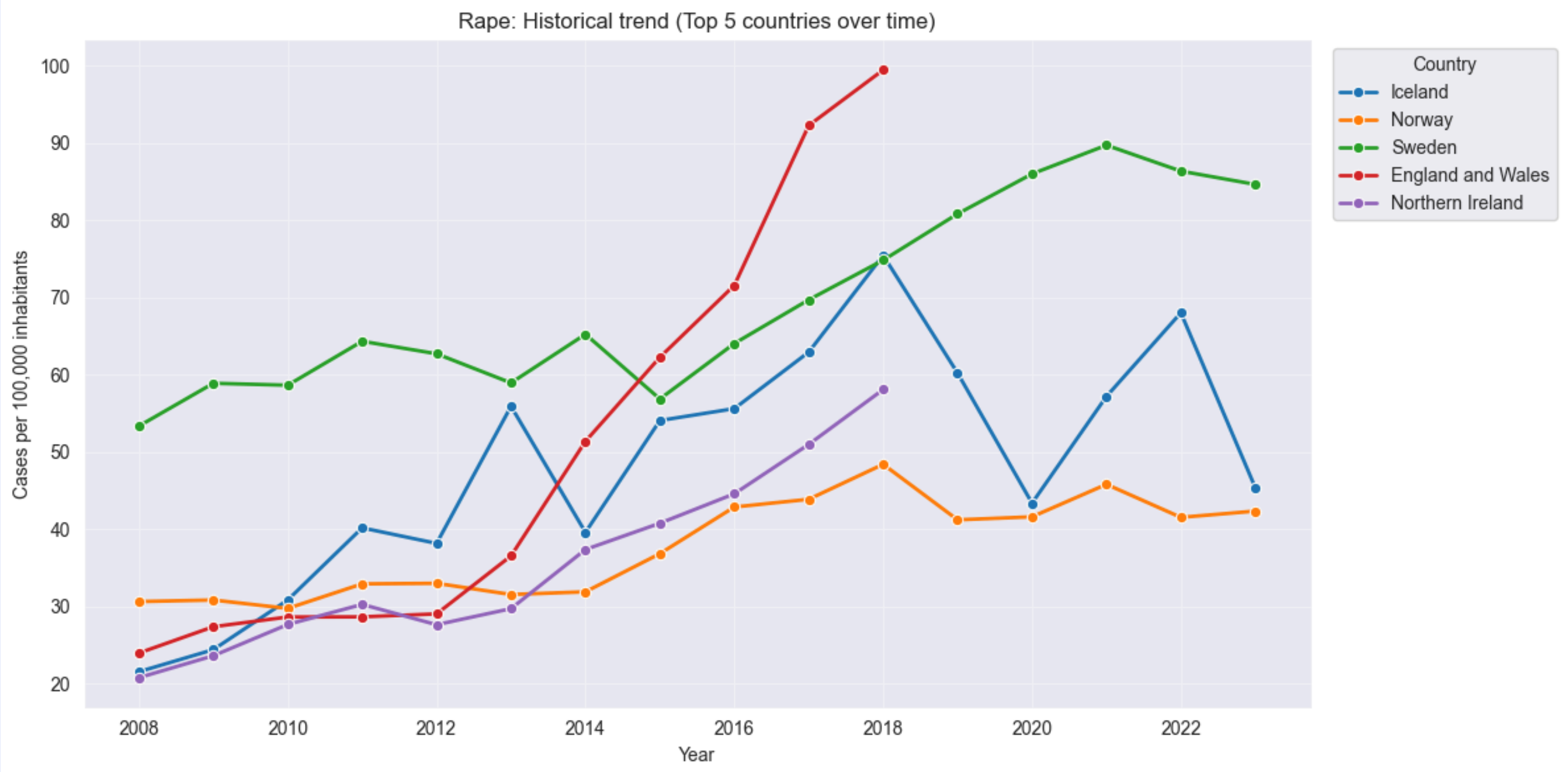They can be found here: https://ec.europa.eu/eurostat/web/crime/database

"Countries' "Criminal Fingerprint"

Austria: The most common crime across the years

The most common issue in most countries is theft.

Estonia: Top 15 Most Frequent Crimes

Sweden: Top 15 Most Frequent Crimes

Crimes with highest incline in Europe 2021-2023

Physical Security Risk (Robbery, Serious assault, Theft, Homicide)	Belgium, France, Spain, Germany, Finland, Ireland, Luxembourg, Sweden
Institutional Risk (Bribery, Corruption, Money laundering, Organized criminal group)	Albania, Austria, Belgium, Denmark, Greece, Hungary, Liechtenstein, Luxembourg, Montenegro, Sweden
High Social Sensitivity Profile (Rape, Sexual violence, Sexual assault)	Sweden, Norway, Luxembourg, Ireland, Iceland, Germany, France, Denmark, Belgium, Austria

Sweden shows some of the highest indicators of sexual offences. Possible reasons include legal changes (2018 consent-based law), higher willingness to report and greater trust in the police, changes in counting methodology, as well as demographic shifts linked to immigration. The increase therefore reflects improved detection and reporting rather than necessarily higher crime levels.
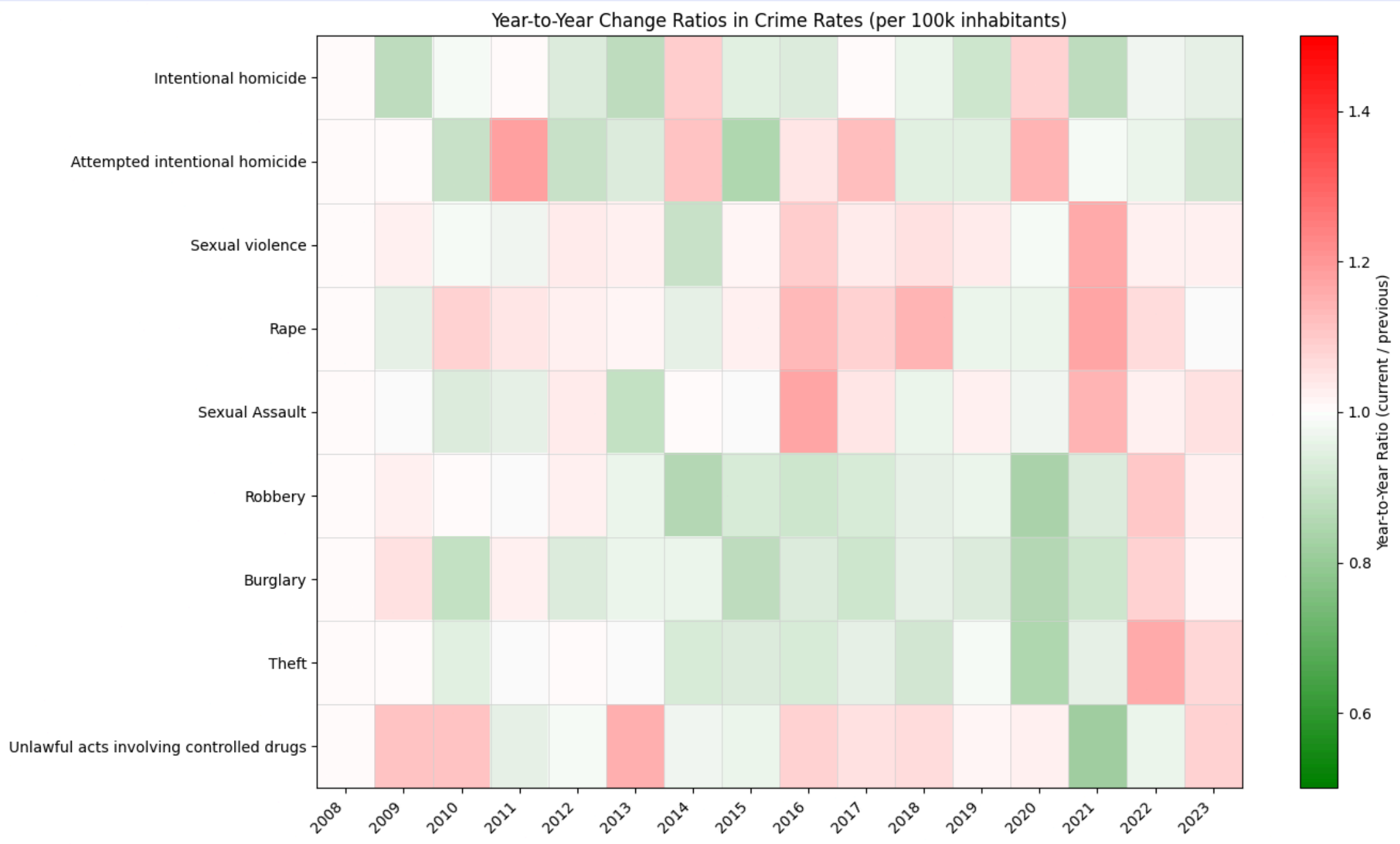
Modern crime categories are on the rise.
In recent years, there has been a noticeable increase in drug offences, money laundering, cyber-attacks, child pornography cases and rape-related incidents, while crimes against property (e.g., theft) are declining.

Rape: Historical trend (Top 5 countries over time)

Acts against computer systems: Historical trend (Top 5 countries over time)

The mean of total crime in Europe

Data analysis shows that exceeding the European average does not necessarily imply lower safety. Higher values often result from better reporting and detection capabilities, rather than genuinely higher crime levels.

Changes in crime rates appear more pronounced in smaller countries because, relative to their small populations, even minor changes in crime numbers result in larger proportional effects.

Year-to-Year Change Ratios in Crime Rates (per 100k inhabitants)

Crimes involving sex and drugs are on the rise overall, while most other crime types are trending downwards.

Crimes against property (theft, burglary, robbery) are in general declining across Europe. The only exception is motor vehicle theft, which shows growth.
However, there has been a rise in these crimes since 2022, possibly relating to the world opening up again after Covid.

Top crime categories in Europe over time (per 100k inhabitants)