

E.D.A. PROJECT



CRIME
AGAINST
WOMEN

(2001-21)

Introduction

1.1 Background

Crimes against women remain one of the most pressing social challenges in India. Understanding long-term trends, regional disparities, and crime patterns is essential for designing effective policies, improving public safety, and empowering women. This project presents a data-driven analysis of crimes against women in India from 2001 to 2021, focusing on identifying high-risk crimes, vulnerable states, temporal trends, and actionable policy insights.

1.2 Objectives of the Study

The key objectives of this project are:

- To analyze trends in crimes against women over time
- To identify high-risk states and crime categories
- To assess crime severity using a risk-based framework
- To generate actionable recommendations for women and authorities
- To project future crime trends using predictive models

1.3 Scope of the Project

- Time Period: 2001–2021
- Geographic Coverage: All Indian states and union territories in the dataset

Crime Categories Analyzed:

- Rape
- Kidnapping & Abduction
- Dowry Deaths
- Assault Against Women
- Assault on Modesty
- Domestic Violence
- Women Trafficking

2. METHODOLOGY

2.1 Tools and Technologies

- Programming Language: Python
- Libraries Used:
- Pandas & NumPy (Data handling and computation)
- Matplotlib & Seaborn (Visualization)
- SciPy (Statistical analysis)
- Scikit-learn (Predictive modeling)

2.2Data Processing Steps


- Data loading and inspection
- Handling missing values (if any)
- Aggregation by year and state
- Crime-wise and state-wise analysis
- Severity-based risk scoring
- Trend analysis and forecasting

3. DATA DESCRIPTION

3.1 Dataset Source

The dataset used for this analysis is titled "CrimesOnWomenData.csv", which contains officially reported crime statistics.text

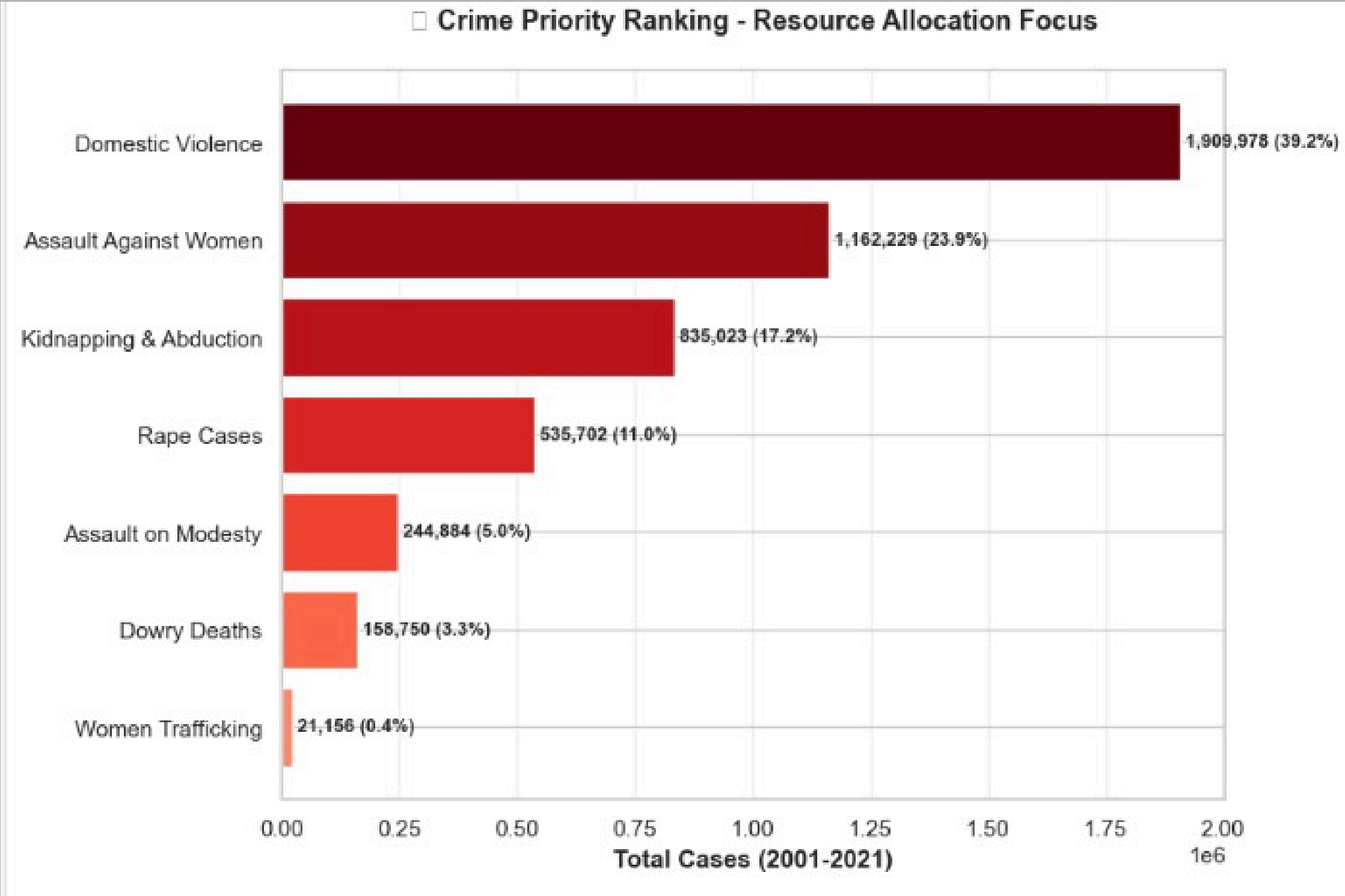
3.2 Overall Statistics

 OVERALL STATISTICS:

- Total Cases Reported (2001-2021): 4,867,722
- Cases in 2001: 128,537
- Cases in 2021: 348,092
- Change: +170.8% ⚠️ ALARMING INCREASE
- Average Cases per Year: 231,796

4. EXECUTIVE SUMMARY OF KEY FINDINGS

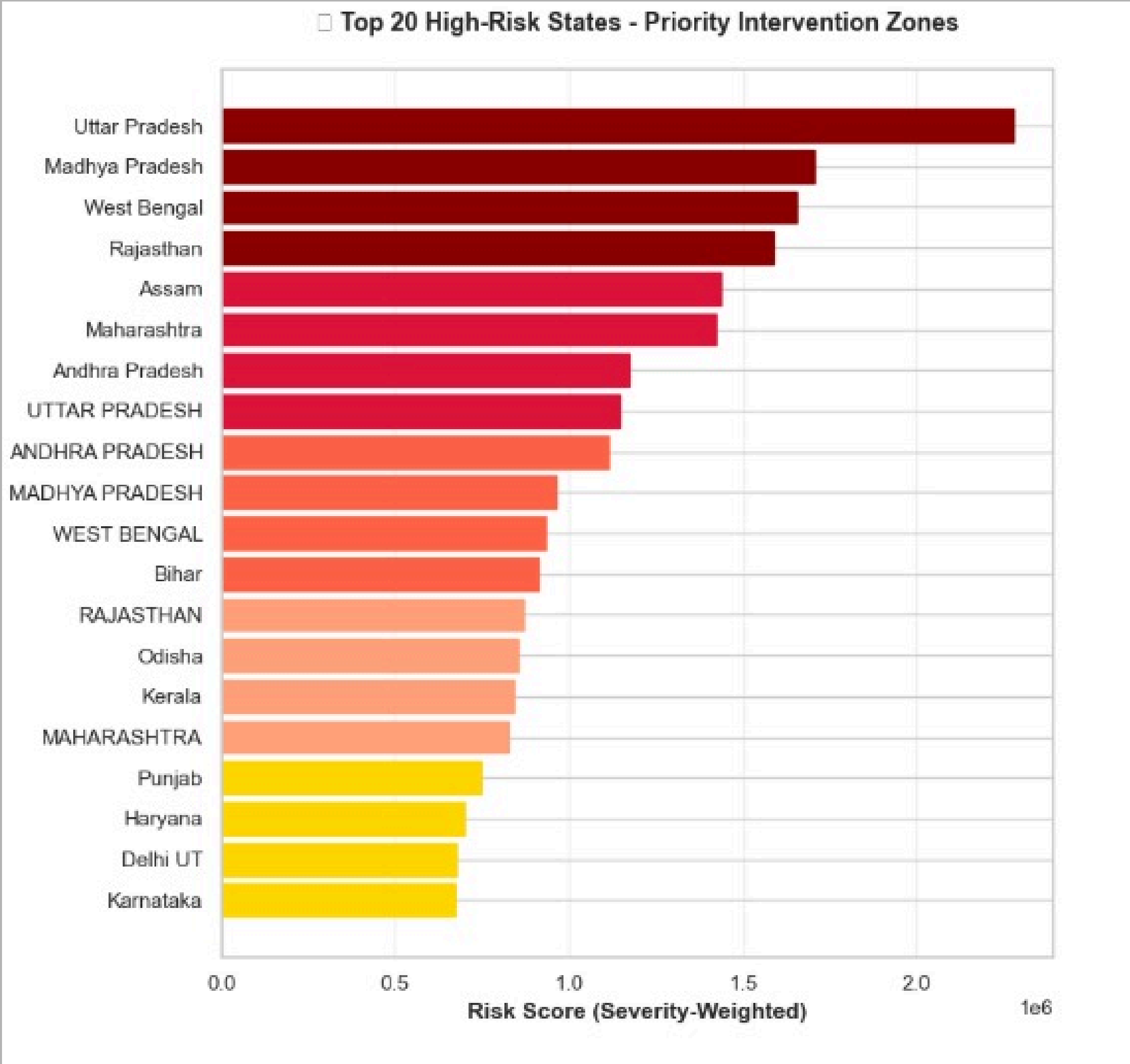
4.1 Highest Priority Crime Category



🚨 HIGHEST PRIORITY CRIME: Domestic Violence

- Total Cases: 1,909,978 (39.2% of all crimes)

4.2 High-Risk States

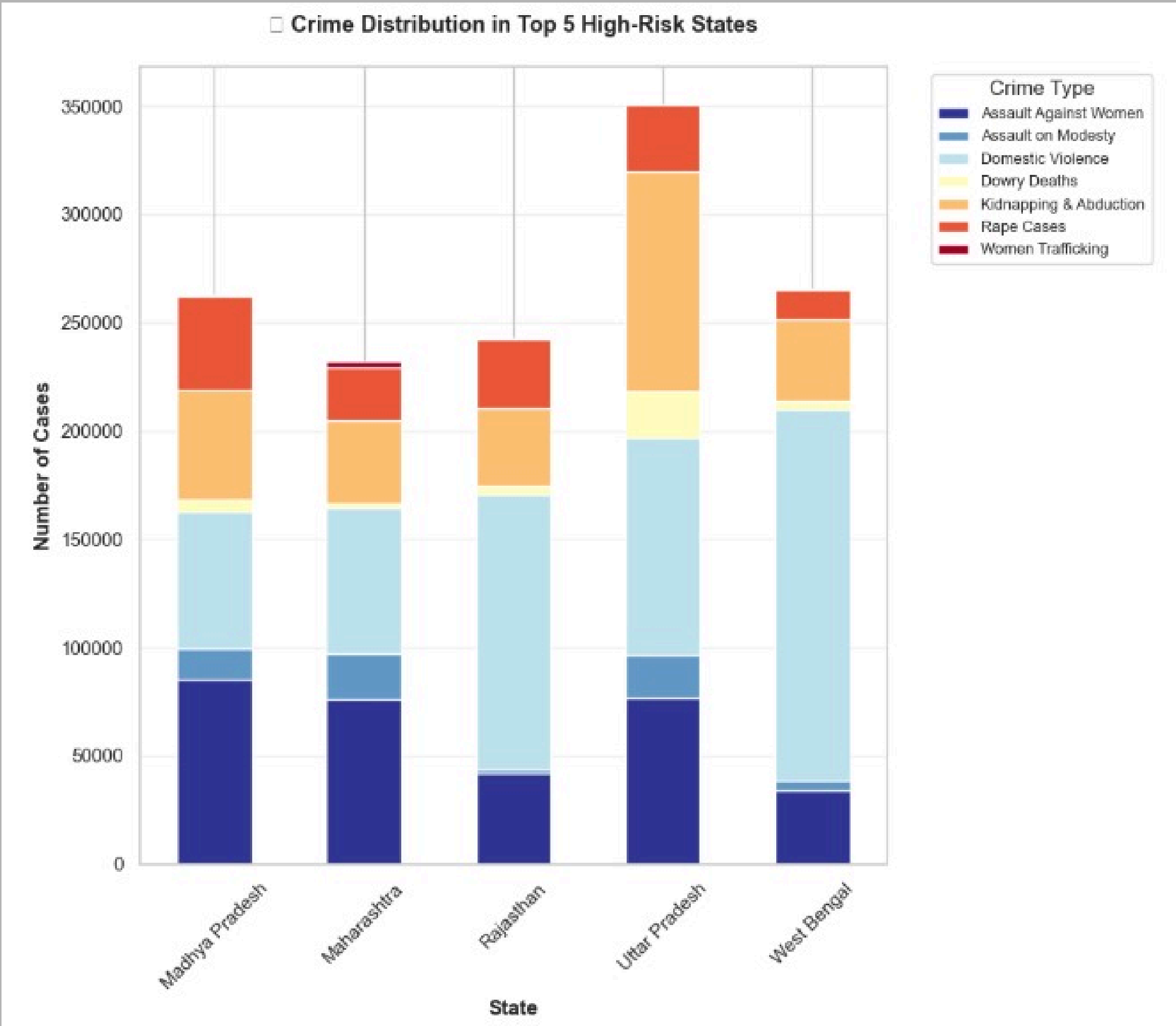


5. GEOGRAPHIC RISK ASSESSMENT

5.1 State Risk Ranking

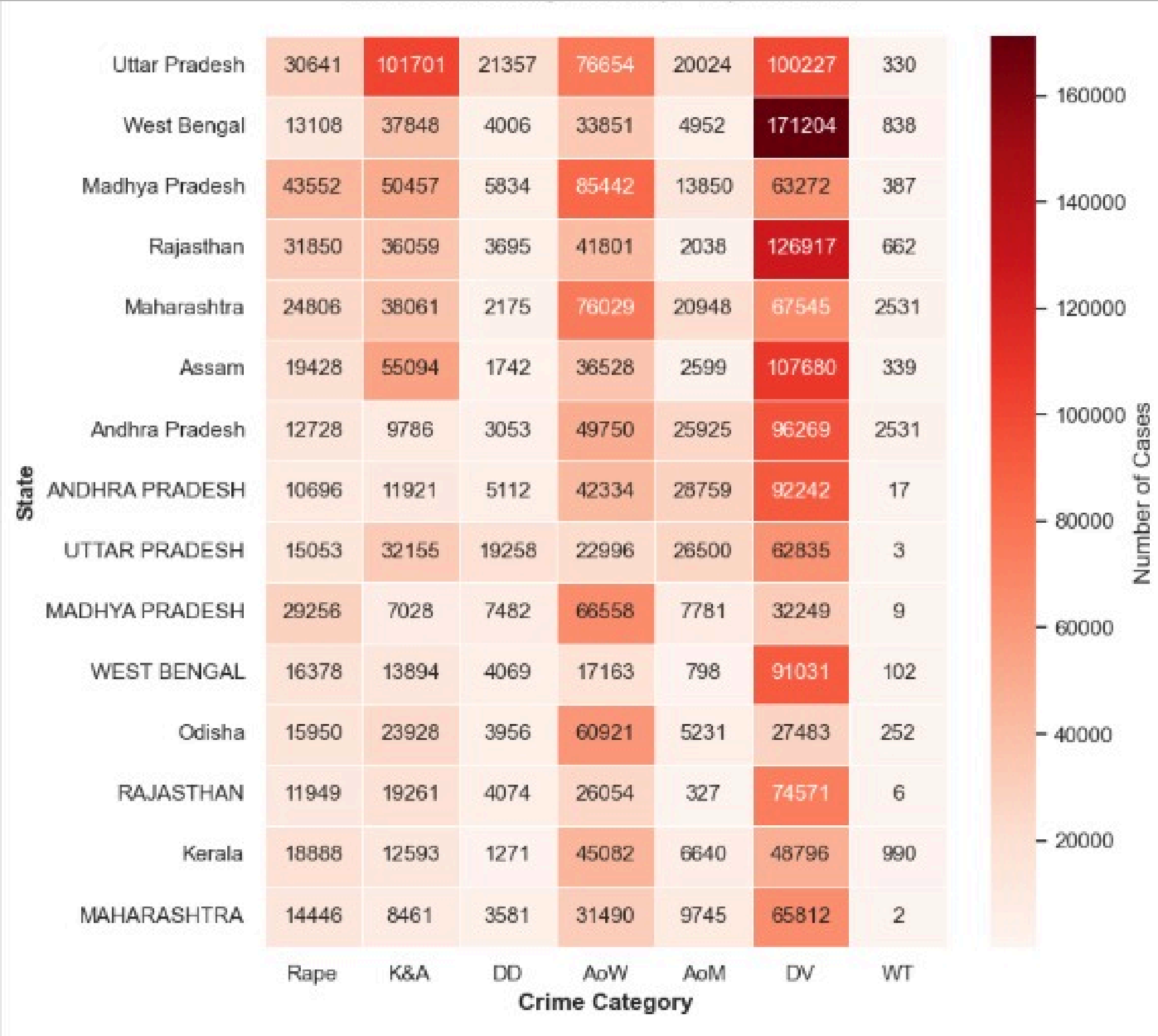
SAFETY RISK ASSESSMENT - GEOGRAPHIC VULNERABILITY ANALYSIS				
STATE RISK RANKING (Top 15 - Priority for Resource Allocation):				
1. Uttar Pradesh	Risk Score:	2,277,898		CRITICAL
2. Madhya Pradesh	Risk Score:	1,706,563		CRITICAL
3. West Bengal	Risk Score:	1,655,061		CRITICAL
4. Rajasthan	Risk Score:	1,588,123		CRITICAL
5. Assam	Risk Score:	1,437,444		CRITICAL
6. Maharashtra	Risk Score:	1,423,517		HIGH
7. Andhra Pradesh	Risk Score:	1,173,571		HIGH
8. UTTAR PRADESH	Risk Score:	1,146,951		HIGH
9. ANDHRA PRADESH	Risk Score:	1,116,709		HIGH
10. MADHYA PRADESH	Risk Score:	966,574		HIGH
11. WEST BENGAL	Risk Score:	933,668		ELEVATED
12. Bihar	Risk Score:	912,406		ELEVATED
13. RAJASTHAN	Risk Score:	870,035		ELEVATED
14. Odisha	Risk Score:	855,043		ELEVATED
15. Kerala	Risk Score:	841,136		ELEVATED

5.2 Crime Distribution in High-Risk States

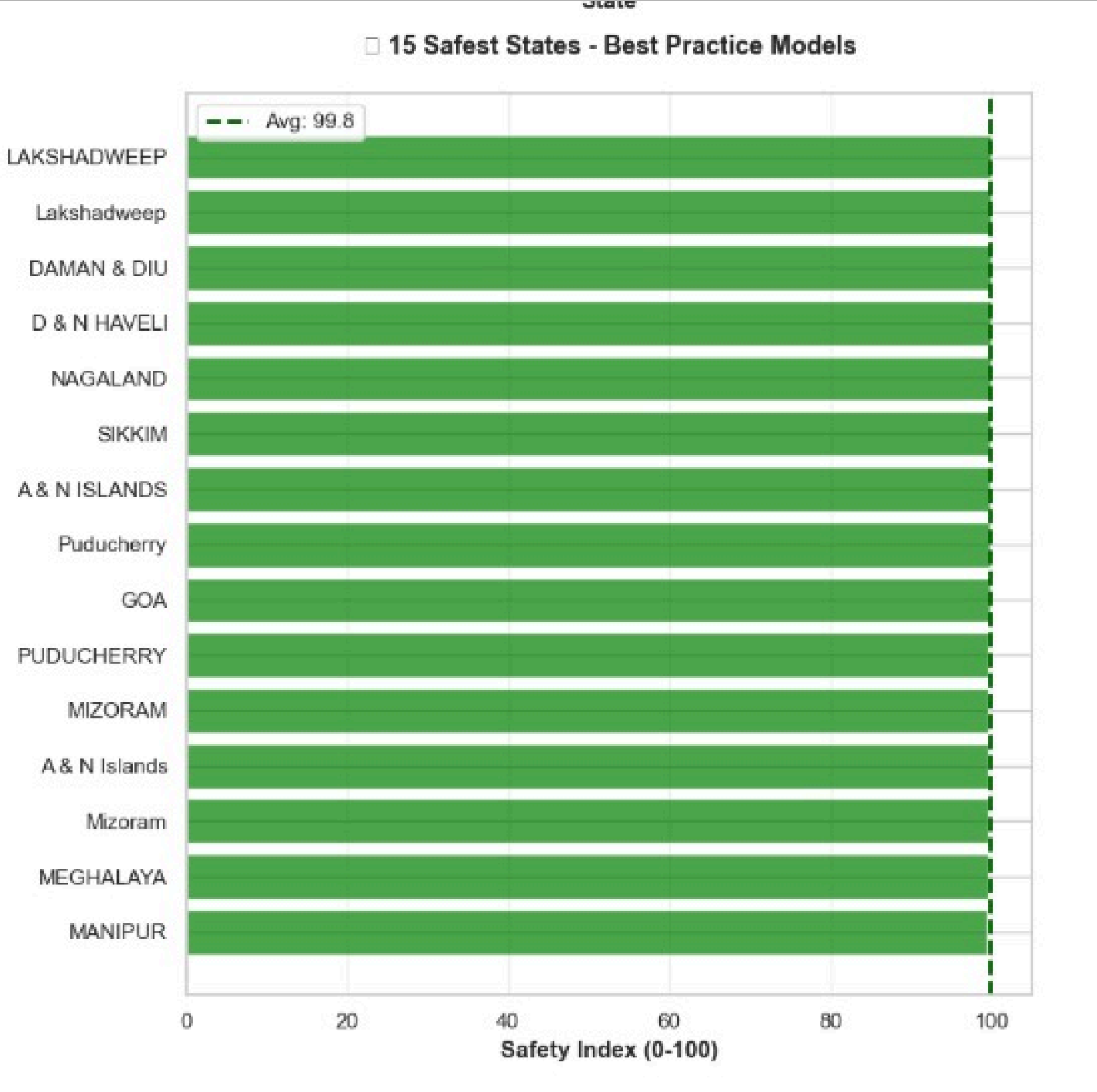


5.3 Crime Intensity Heatmap

The heatmap provides a granular view of crime intensity across categories and states. Darker shades represent higher crime counts, clearly revealing clusters of extreme vulnerability.

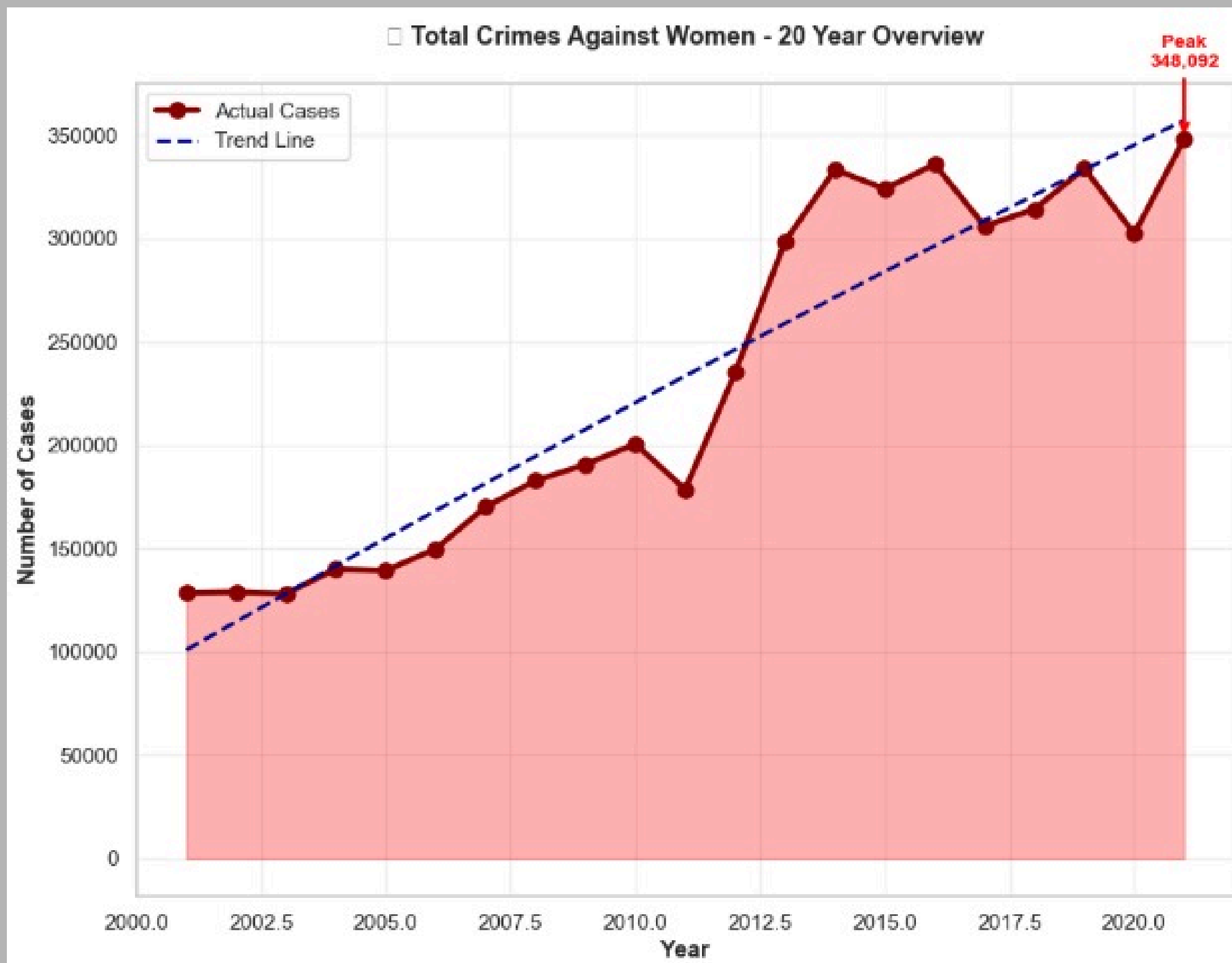


5.4 Safest States



6. TEMPORAL TREND ANALYSIS

6.1 Long-Term Crime Trends



Key findings:



TREND ANALYSIS:

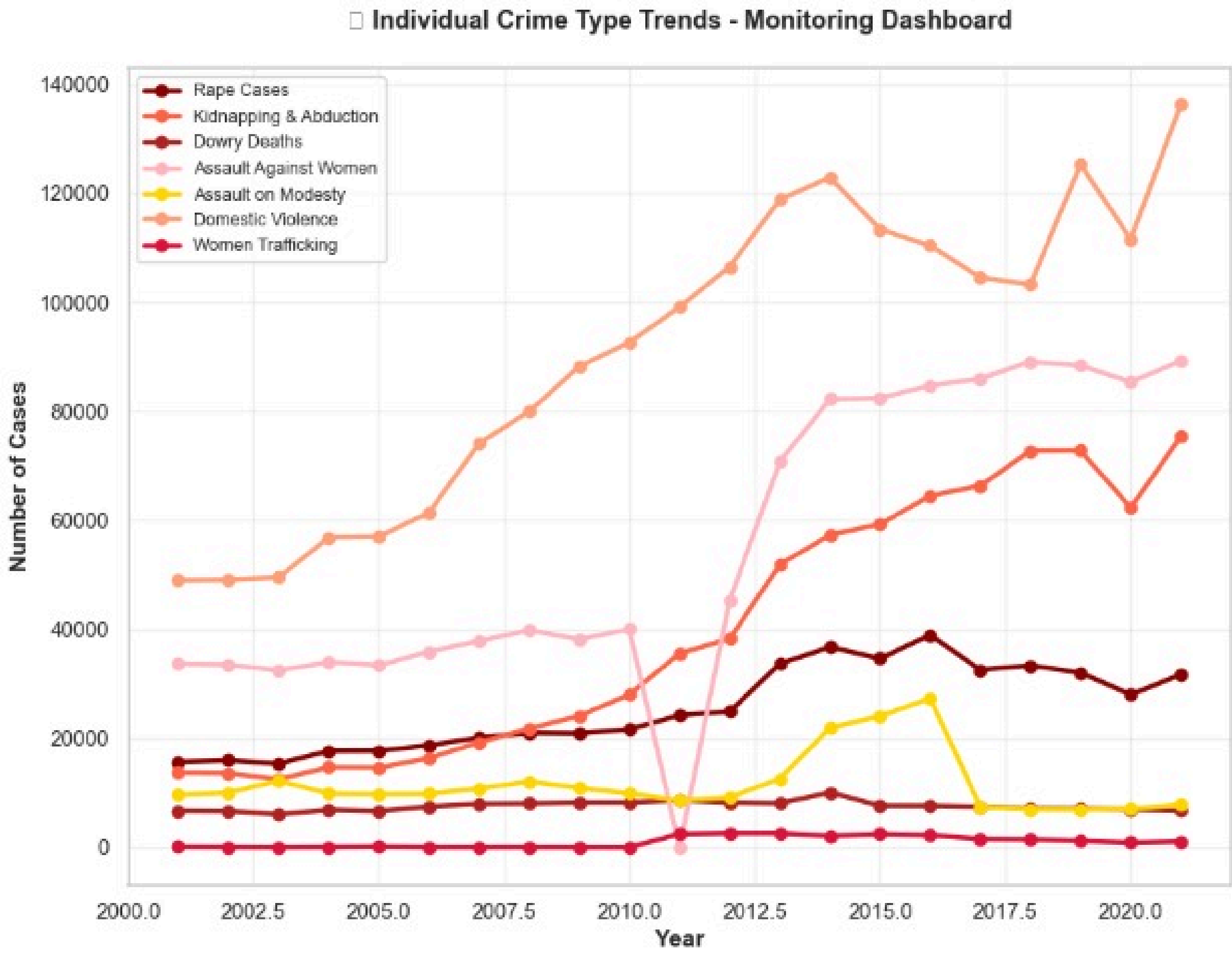
- Peak Crime Year: 2021 (348,092 cases)
- Lowest Crime Year: 2003 (128,142 cases)
- Average Annual Increase: 10,978 cases/year



RECENT TREND (Last 5 Years):

- Change: +13.8% ⚠️ ESCALATING

6.2 Individual Crime Trends

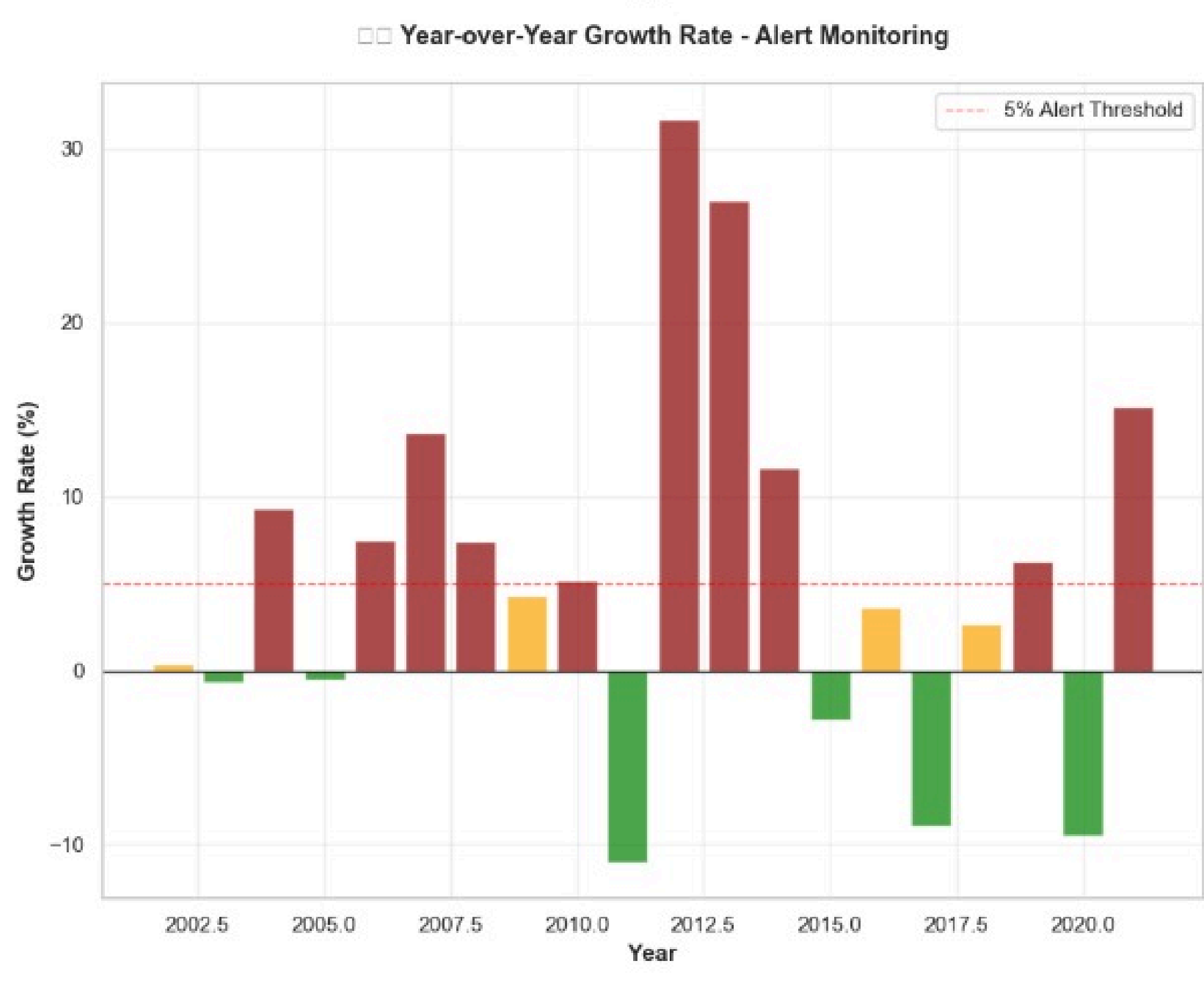


Observations:

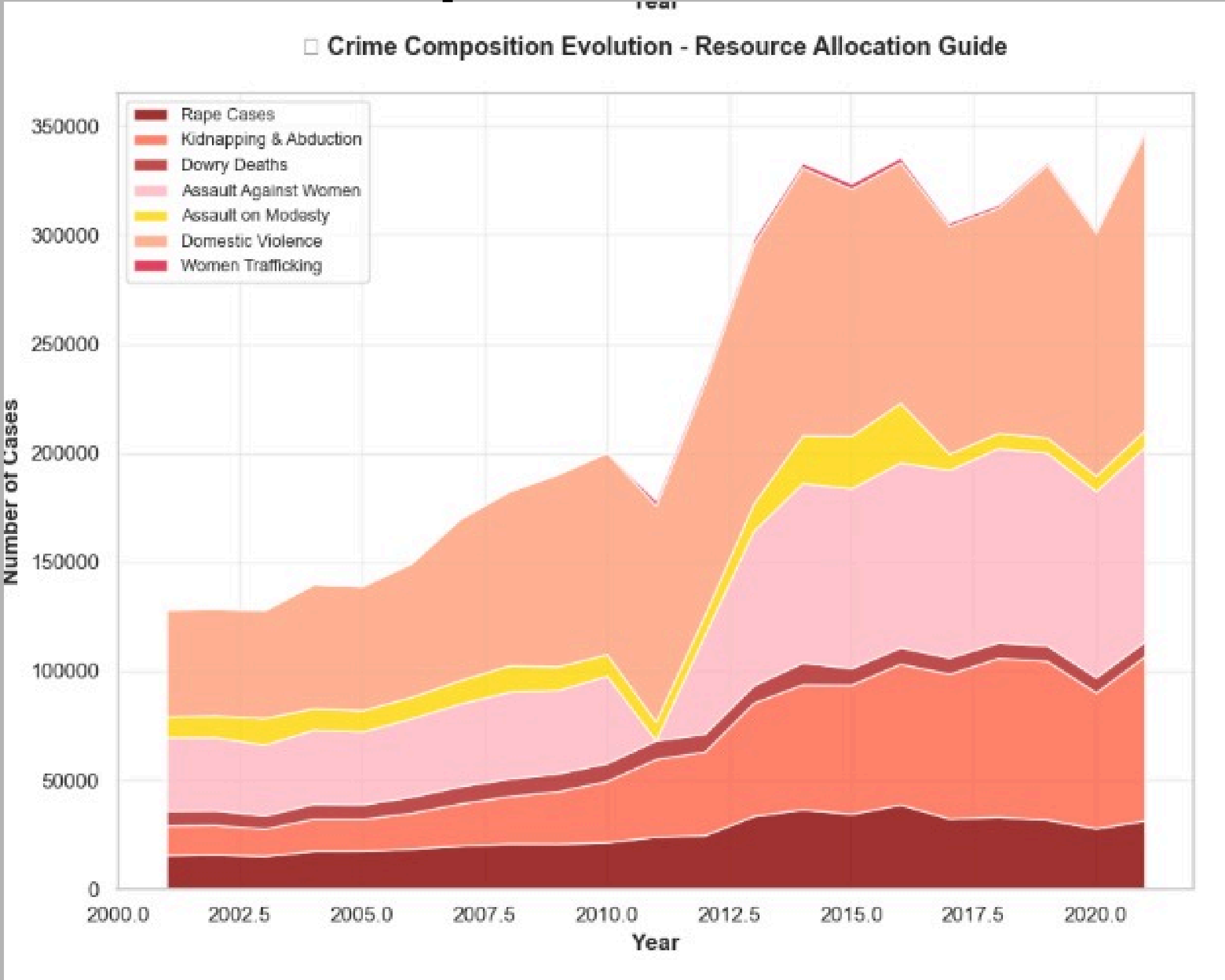
- Domestic Violence and Assault Against Women show steep increases
- Rape cases rise steadily over time
- Women Trafficking shows sharp percentage growth despite lower absolute numbers

⚡ FASTEST GROWING CRIME TYPES (Require Immediate Focus):			
• Rape Cases	: +101.8%		▲ SURGING
• Kidnapping & Abduction	: +450.9%		▲ SURGING
• Dowry Deaths	: +0.2%		📈 Increasing
• Assault Against Women	: +165.3%		▲ SURGING
• Assault on Modesty	: -19.3%		✓ Decreasing
• Domestic Violence	: +177.8%		▲ SURGING
• Women Trafficking	: +839.5%		▲ SURGING

6.3 Year-over-Year Growth Rate

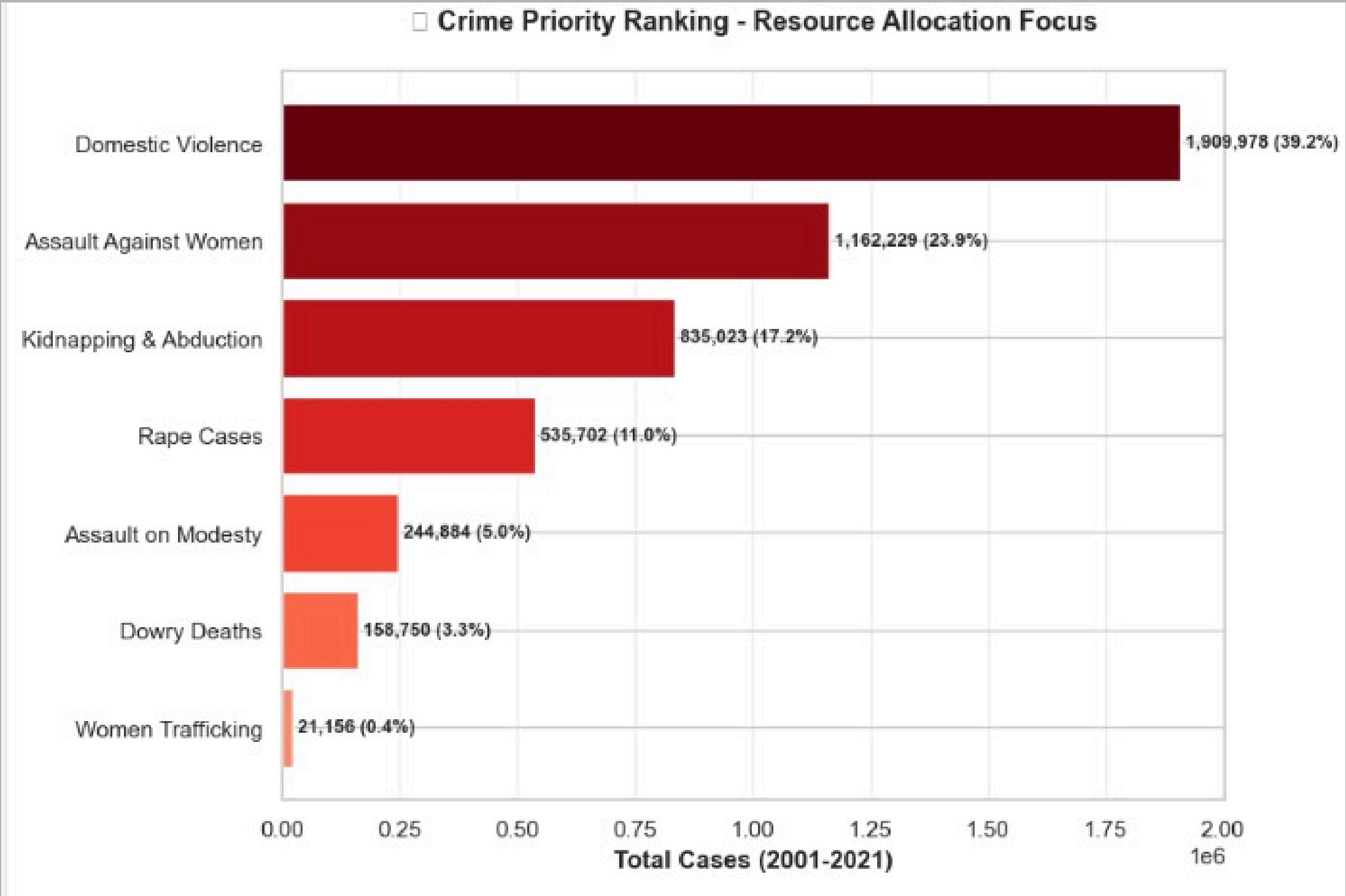


6.4 Crime Composition Evolution



Finding: Domestic Violence increasingly dominates the overall crime structure, reshaping resource allocation priorities

7. CRIME-SPECIFIC ANALYSIS



Priority order observed:

- 1.Domestic Violence
- 2.Assault Against Women
- 3.Kidnapping & Abduction
- 4.Rape

8. COMPARATIVE ANALYSIS: SUCCESS STORIES

States with declining trends (recent 5-year average < early 5-year average):

- Lakshadweep: -95.0% reduction
- Nagaland: -20.5% reduction
- Sikkim: -15.2% reduction

9. RECOMMENDATIONS

9.1 Recommendations for Women

- Increased awareness of high-risk crimes and regions
- Use of safety applications and emergency helplines
- Community participation and reporting mechanisms

9.2 Recommendations for Authorities

- Targeted intervention in critical states
- Strengthening law enforcement and fast-track courts
- Expansion of surveillance and women-centric policing

