

Canadian Provincial Crime Patterns: Ontario, Alberta, and Manitoba

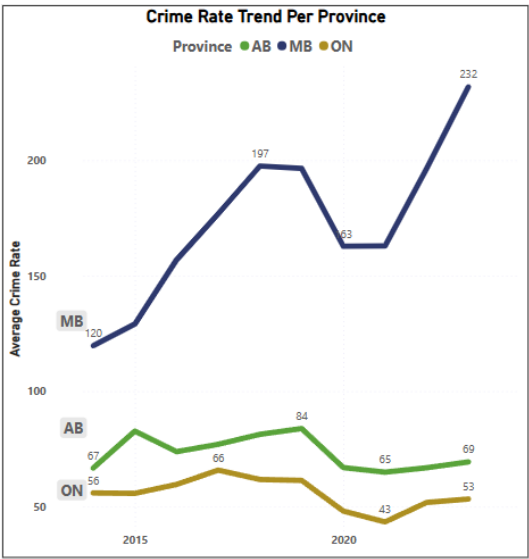
This presentation analyzes robbery crime patterns across three major Canadian provinces: Ontario, Alberta, and Manitoba from 2014-2022. The analysis focuses on robbery incidents due to their significant impact on public safety and community well-being, examining crime rates per 100,000 population across major cities and provinces to identify regional patterns, trends, and correlations between youth and adult crime rates. The comprehensive analysis provides insights into crime distribution, temporal trends, and predictive forecasting to support evidence-based policing strategies and resource allocation decisions for law enforcement agencies.

Province Year	AB			MB			ON	
	City	Province	Total	City	Province	Total	City	Province
2014	2576	2725	5301	1455	1531	2986	7569	7617
2015	3181	3429	6610	1571	1668	3239	7589	7644
2016	2829	3097	5926	1954	2062	4016	8207	8275
2017	3019	3263	6282	2258	2360	4618	9191	9266
2018	3259	3491	6750	2541	2671	5212	8775	8849
2019	3400	3651	7051	2556	2692	5248	8898	8944
2020	2716	2950	5666	2107	2246	4353	7054	7101
2021	2650	2878	5528	2134	2268	4402	6385	6442
2022	2806	3016	5822	2657	2776	5433	7799	7849
2023	3054	3257	6311	3219	3372	6591	8278	8321

Power BI was selected as the primary visualization tool due to its robust analytical capabilities, interactive dashboard features, and advanced forecasting functions that enable seamless integration of multiple data sources while supporting complex statistical analysis. The platform provides professional-grade visualizations suitable for executive reporting, with forecasting algorithms and correlation analysis capabilities that are particularly valuable for predictive crime analysis. Its interactive filtering and drill-

down features facilitate comprehensive exploration of crime patterns across different geographic and temporal dimensions, making it ideal for law enforcement decision-making.

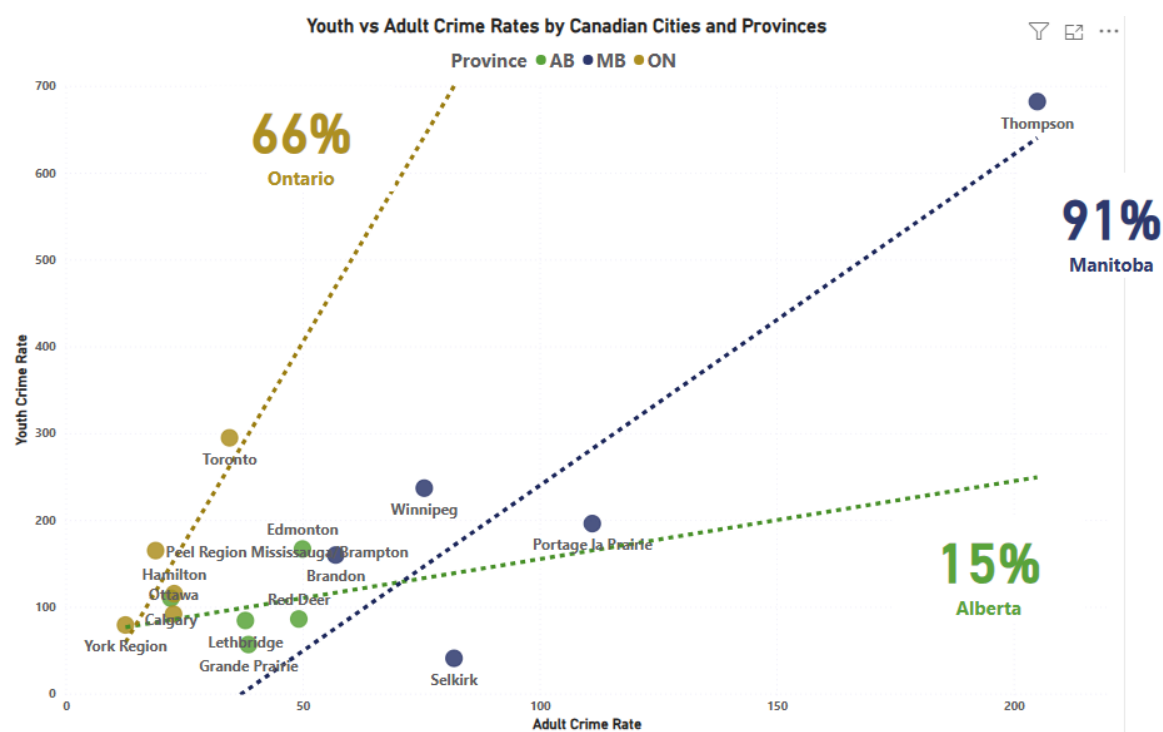
The analysis employed a multi-dimensional approach combining temporal, geographic, and demographic perspectives, with data aggregated at both city and provincial levels while calculating crime rates per 100,000 population for standardized comparison. The methodology included geographic analysis through ranking cities within each province by crime rates, temporal analysis examining year-over-year trends from 2014-2022, correlation analysis of youth versus adult crime rate relationships using scatter plot visualization, and predictive modeling through time-series forecasting using Power BI's built-in algorithms. Visualizations were strategically designed to highlight key patterns using bar charts for city rankings, line charts for temporal trends, scatter plots for correlation analysis, and forecasting charts for predictive insights. This comprehensive approach ensures thorough coverage of crime patterns while maintaining clarity and delivering actionable insights for law enforcement decision-making processes.



Provincial Crime Rate Analysis and Correlations

The analysis reveals significant disparities in crime rates across provinces, with Manitoba demonstrating the highest overall crime rates and a 91% correlation between youth and adult crimes, indicating strong interconnected criminal patterns that require comprehensive intervention strategies. Ontario shows

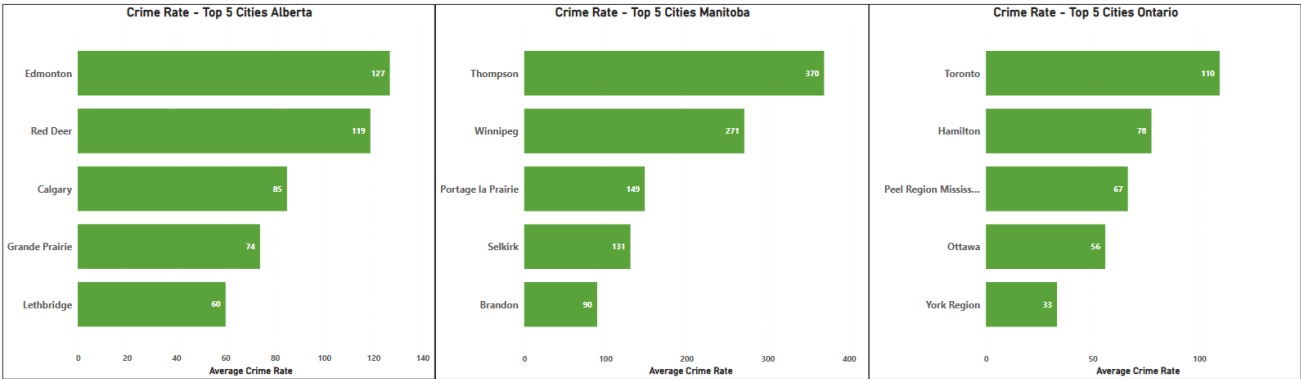
moderate crime rates with a 66% correlation, suggesting balanced crime patterns that may benefit from targeted prevention programs, while Alberta exhibits the lowest crime rates with only a 15% correlation, indicating different crime dynamics that suggest successful prevention or different demographic factors at play.



City-Level Crime Distribution Patterns

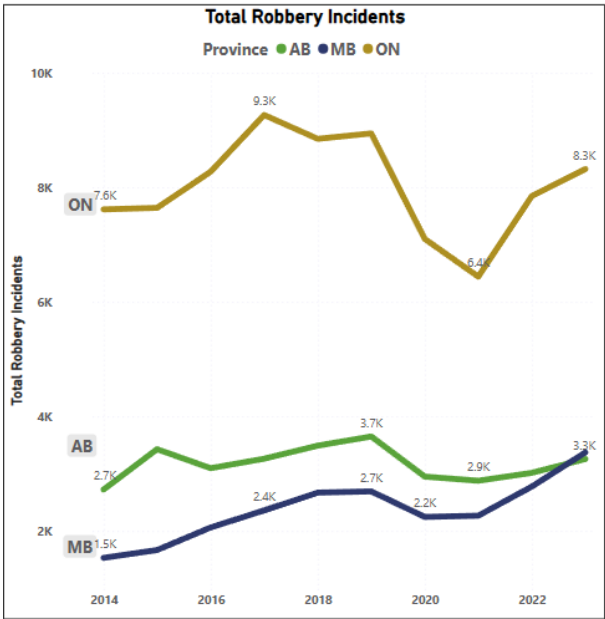
Manitoba's urban centers show the most concerning crime rates, with Thompson leading at 370 incidents per 100,000 population and Winnipeg following with 271 incidents per 100,000, demonstrating significant variation between urban centers that suggests concentrated crime hotspots requiring immediate attention. Ontario's cities display more uniform distribution across major centers, with Toronto topping at 110 incidents per 100,000 population while York Region shows the lowest rates at 33 per 100,000, indicating more balanced urban crime management. Alberta maintains generally lower crime rates

compared to other provinces, with Edmonton leading at 127 incidents per 100,000 population and Calgary following at 85 incidents per 100,000, suggesting effective provincial crime prevention strategies.



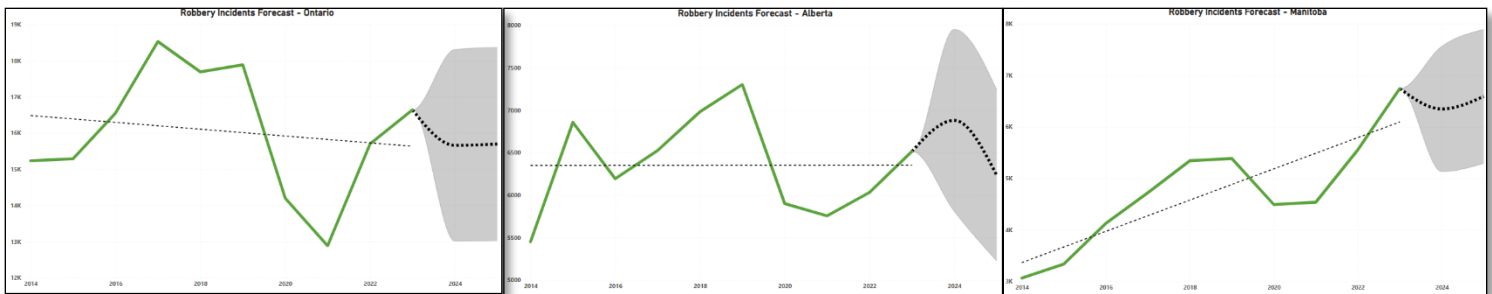
Temporal Crime Trends and Patterns

The temporal analysis from 2014-2022 reveals fluctuating patterns across all provinces, with Ontario showing a gradual increase from 6,400 to 9,300 incidents, indicating growing urban crime challenges that require proactive intervention. Manitoba demonstrates significant volatility with peaks around 2016-2018, suggesting external factors or policy changes that influenced crime rates during this period, while Alberta maintains relatively stable patterns with slight variations, indicating consistent law enforcement effectiveness and community stability.



Crime Rate Prediction

Based on historical trends and statistical modeling, Ontario is projected to experience a slight increase in robbery incidents with 8-10% growth driven by urbanization and population growth factors, with estimated incidents reaching 10,000-10,500 by 2024, requiring strategic planning for volume management and resource allocation. Manitoba is expected to see stabilization after recent volatility, with projected 2,800-3,200 incidents annually, though focus must remain on Thompson and Winnipeg metropolitan areas where crime concentration remains highest. Alberta's forecast indicates continued moderate growth trajectory with estimated 7,500-8,000 incidents by 2024, with Edmonton and Calgary remaining primary concern areas, though the stable patterns suggest current strategies are effective and should be maintained with continued monitoring.



The forecasting model indicates Manitoba requires immediate attention due to high per-capita rates and volatile patterns, while Ontario needs strategic planning for managing increasing volume, and Alberta's stable patterns suggest current strategies are effective but require continued monitoring and potential adaptation for other provinces.

Conclusion and Recommendations

The comprehensive analysis demonstrates clear provincial differences requiring tailored approaches while maintaining consistent national standards for public safety. Resource allocation priority should focus immediately on deploying additional resources to Manitoba, particularly Thompson and Winnipeg, while medium-term strategies should strengthen Ontario's urban centers like Toronto and Hamilton, and

maintenance of Alberta's effective strategies should continue. Youth crime prevention initiatives must be implemented through targeted programs in high-correlation areas like Manitoba (91%), community engagement initiatives in Ontario (66% correlation), and studying Alberta's successful youth crime prevention model (15% correlation) for potential replication.

Predictive policing strategies should establish early warning systems for crime trend detection, implement data-driven patrol scheduling, and develop inter-provincial best practice sharing to maximize resource effectiveness across all regions. Community partnerships must be strengthened through enhanced community policing in high-crime cities, development of crime prevention education programs, and establishment of business-police partnerships in commercial areas to create comprehensive crime prevention networks. These integrated approaches will ensure evidence-based decision-making while fostering community engagement and sustainable crime reduction across all three provinces.