An Analysis on the Location and Type of Index Crimes in the Philippines

by

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Introduction

- Crime is as an act committed or omitted in the violation of a law forbidding or commanding it and for which a punishment is imposed upon conviction.

- In the Philippines, the Revised Penal Code (Republic Act. No. 3815) serves as the fundamental law that defines criminal offenses and provides the penalties for the commission of such.

- Crime is divided into index and non-index crimes for statistical purposes and to create a standardized definition of crime classification.

- Index crimes refer to crimes against person and crimes against property such as murder, homicide, physical injury and rape, carnapping/carjacking, and cattle rustling.

- On the other hand, non-index crimes are violations of special laws such as illegal logging or local ordinances.

Source: Senate Economic Planning Office, 2013

Introduction

- Based on PNP reports, crime rates in the Philippines has a steady drop and crime solution efficiency has also improved over the years.

- However, despite these improvements, our crime solution efficiency remains low compared to ASEAN countries. Thus, there is a need to further study or analyze crime data in order to understand it better.

- This study aims to determine the crime hotspots or location where a specific type of index crime is most likely to occur.

Objective

This study aims to determine the crime hotspots or location where a specific type of index crime is most likely to occur.

Methodology

- Correspondence analysis
- The Signed -Chi-Square statistic

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Results

Table 1: Distribution of Index Crimes per region (Year 2013)

Location	Count(%)	Location	Count(%)
1	24462 (5%)	9	23215 (4%)
2	9334 (2%)	10	33218 (6%)
3	43087 (8%)	11	33838 (6%)
4A	28546 (5%)	12	25706 (5%)
4B	11756 (2%)	13	8662 (2%)
5	28035 (5%)	ARMM	3878 (1%)
6	67517 (13%)	CAR	12841 (2%)
7	51749 (10%)	NCR	98020 (19%)
8	17327 (3%)		

Table 2. Summary of the Main Statistical Results

Dimension	Singular Value	Inertia	Proportion of Inertia	
			Accounted for	Cumulative
1	0.229	0.052	0.631	0.631
2	0.134	0.018	0.216	0.847
3	0.078	0.006	0.073	0.919
4	0.053	0.003	0.034	0.953
5	0.048	0.002	0.028	0.981
6	0.029	0.001	0.010	0.991
7	0.027	0.001	0.009	1
Total		0.083	1	1

Chi Square = 43159.745; pvalue <0.01

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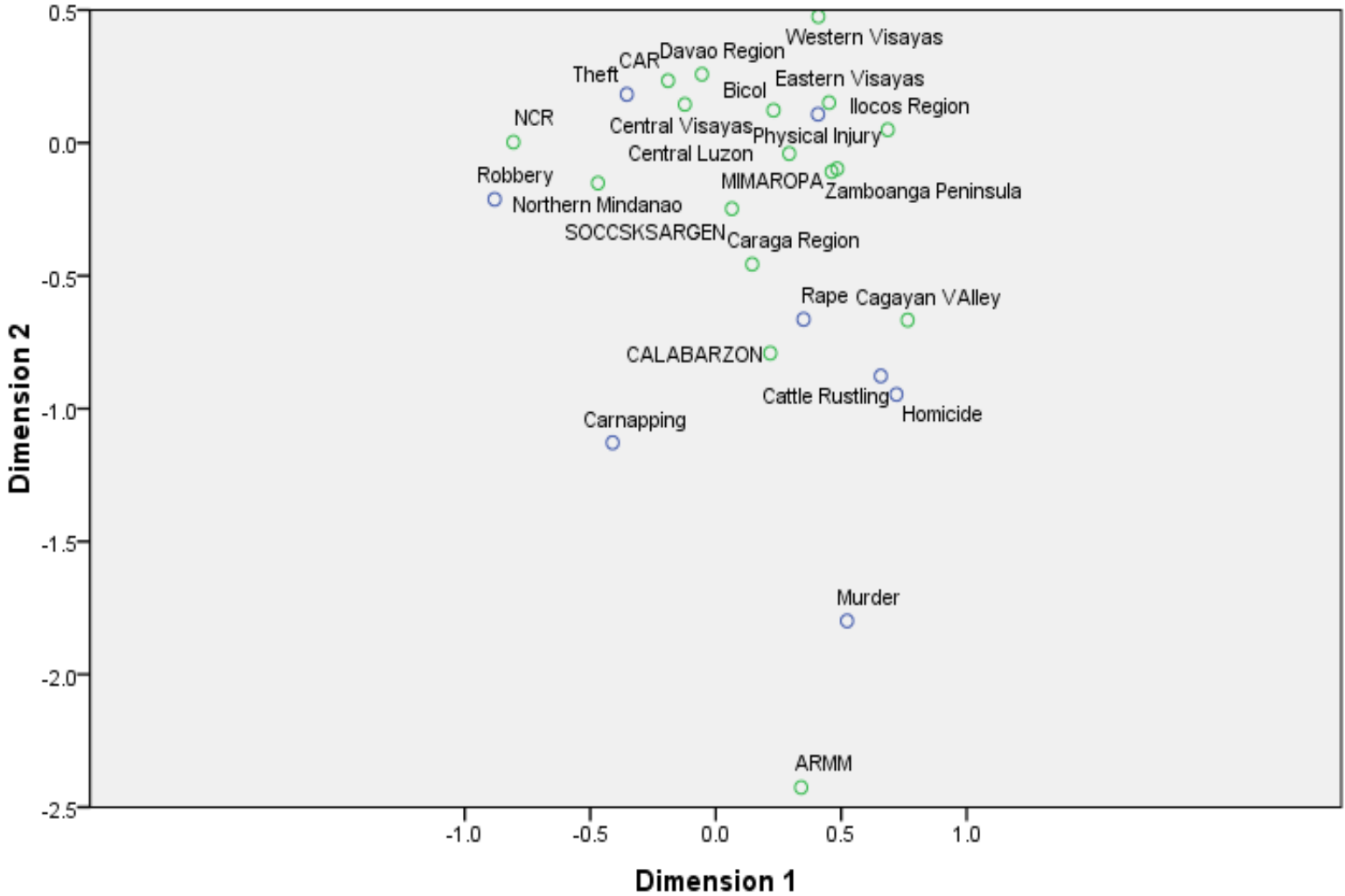
Results

Figure 1. Bi-plot

Results

Table 3: Highly Associated Locations for each type of Index Crimes

Type of Index Crimes	Highly Associated Locations
Murder	Region 4A, Region 13, and ARMM
Homicide	Region 2
Physical Injury	Region 1, Region 3, Region 4B, Region 6, Region 8, and Region 9
Rape	Region 5
Robbery	NCR
Theft	Region 7, Region 10, CAR, and Region 11
Carnapping	-
Cattle Rustling	Region 12

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Results

Table 4: Less Associated Locations for each type of Index Crimes

Type of Index Crimes	Less Associated Locations
Murder	CAR
Homicide	-
Physical Injury	Region 10, and NCR
Rape	Region 7
Robbery	Region 5, Region 6, Region 8, and Region 9
Theft	Regions 1, 2, 3, 4A and 4B, Regions 12, 13, and ARMM
Carnapping	Region 11
Cattle Rustling	-

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Conclusions and Recommendations

- Based on the results, there is a significant association between the location and type of index crimes in the Philippines.

- In general, this implies that there are specific crimes which are most likely to occur in certain regions. Thus, it is recommended that concerned government offices and agencies shall create programs and policies for crime prevention and management on a regional level.

- Specifically, ARMM, CALABARZON, and Caraga Region should focus on policies that will help prevent cases of Murder and improve crime solution efficiency.

- Ilocos region, Central Luzon, MIMAROPA, Western Visayas, Zamboanga Peninsula should address problems on physical injury.

- Central Visayas, Northern Mindanao, Davao Region, and CAR should create further research on prevention and control of theft cases.