CRIME ANALYSIS OF ISLAMABAD USING GEOSPATIAL AND STATISTICAL TOOLS

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SEQUENCE OF PRESENTATION

- Introduction
- Research Objective
- Study Area
- Research Methodology
- Results & Discussion
- Conclusion
- Future
INTRODUCTION

- Increasing population of Islamabad – Increasing crime rate
- Use conventional techniques of recording and processing the crime data

Limitations

- Regional data rather than point data
RESEARCH OBJECTIVE

- The prime goal of this research is to perform crime analysis using geospatial techniques:
  - Developing Geodatabase of crime for Islamabad city
  - To investigate crime pattern by using statistical analysis
  - To map these patterns to investigate spatial distribution of crimes
Study Area

- Geographical Location: 33.7167° N, 73.0667° E
- Surrounding: Rawalpindi
- Total Area: 906 Sq-Km
Research Methodology

Geodatabase
1. Police Station
2. Area under each police station
4. Study Area boundary

Linking Spatial data with attribute data

Thematic Mapping
1. Area under each police station
2. Crime Maps

Statistical Analysis

Identification of crime trends & patterns
RESULTS – AREA UNDER POLICE STATION

Area Under Police Station
RESULTS – CRIME MAP OF ISLAMABAD

Crime - March 2013

Legend
Crime- March 2013

- 15
- 16 - 30
- 31 - 46
- 47 - 61
- 62 - 76

0 2.25 4.5 9 Kilometers

N

Shalimar PS
Kohsar PS
Margalla PS
Abpara PS
Secretariat PS
Women PS
Ramna PS
Industrial PS
RESULTS – CRIME MAP OF ISLAMABAD 2014

Crime - March 2014

Legend
Crime - March 2014
6 - 15
16 - 30
31 - 45
46 - 60
61 - 75
RESULTS – COMPARATIVE ANALYSIS OF CRIME 2013-14

Crime Comparison March 2013 - March 2014

Legend
- Police Station
- Crime 2013-2014

37
2013
2014

9 Kilometers
RESULT – CONTINUE
RESULTS – STATISTICAL ANALYSIS

- The mean crime has increased from 37.875 in 2013 to 43.25 in 2014
- The variation from mean crime “standard deviation” has increased from 18 in 2013 to 22.18 in 2014
- Strong correlation between mean crime per police station and the area under police station’s domain region.
- Coefficient of correlation being 0.7339812
CONCLUSIONS

- Crime has not been controlled
- Crimes like theft have increased in the outskirts of the city
- Coverage of Margalla police station should be decreased and a new police station to be established in G-9 to help maintain law and order in the area
- More diversions and street gates in the outskirts of the city
**Future Work**

- Prototype Spatial database about Crime in Islamabad is ready
- Adequate point type and informative crime data should be made available
- A proper web based interface and crime maps can be generated for different audiences
- Help police devise strategies and counter the increasing crime in the Capital City