

Spatial Analysis of Urban Delinquency in 22 Regions of Metropolitan Tehran

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Introduction

Spatial analysis of urban delinquency at the level of regions and providing security is one of the basic factors in optimum urban management. Spatial analysis of urban delinquency and interpretation of its distribution in different locations make it possible to organize and manage spaces. Recently, Tehran megalopolis, with 22 municipality regions has the highest rate of urban delinquency in Iran. Preliminary study of documents at the department of social issues in police organization show that data related to urban delinquency are collected for each year. Data reflects this fact that one of the most important social and security problems in Tehran is the high number of delinquency and crime. On the basis of daily police report, about 15 to 20 house thefts occur in Tehran. This problem leads to spending considerable amounts of budget and human resources to control and provide security. Also, problems such as individual and group fights, theft, stealing from pockets, car and motor cycle theft, social corruption specially, rape, drug and alcoholic beverages sales are the most important among urban delinquencies. Some of these problems are very important for police force, considering the political-security, social and cultural dimensions. Therefore, it is necessary to study and analyze the distribution of delinquency and its types in different regions of Tehran. It can be considered as the first step to prevent and control urban delinquency. Therefore, the following questions are addressed in this research: How is the distribution of delinquencies in 22 municipality regions of Tehran? How are the reciprocal relationships of the urban delinquencies in these 22 regions? What are the relations between distributions of urban delinquencies with population density in these 22 regions?

To confront the problem, considering the literature review, urban delinquencies were analyzed at two spatial levels: 1- Micro-individual level analysis that emphasizes the individual differences between delinquent and non-delinquent individuals. 2- Macro analysis that emphasizes the role of social context in the distribution of delinquency and emphasizes spatial units. The spatial analysis of delinquencies is performed at different levels: urban blocks, neighborhoods, areas, urban regions and finally, at the country level. One of the issues considered by geographers is the spatial analysis of urban delinquency

in urban and regional studies. Recently, geographers use Geographic Information System (GIS) to present the spatial distribution of delinquency on the basis of spatial data, location of committing crime, socio-economic characteristics of delinquents, and place of residence. Identifying the nodes of delinquencies enables us to predict the location of delinquent events with the help of Arc GIS software. Finally, this information can be used by the Police to control and reduce the rate of delinquencies at the level of city and to increase security. Theories related to delinquency nodes can be classified into three groups: 1- Theories related to nodes of delinquencies, 2- Theories related to the relation between delinquencies with population density, and 3- Ecological and population theories. Each of these theories tries to explain delinquency in a particular way. Current research considers theories related to delinquencies and population density.

Materials and Methods

Statistical population of this study includes delinquents arrested in 2009, in 22 regions of Tehran, those who have profiles available for them. Data and information about these delinquents were collected by department of social issues of police organization. Variables were divided into two groups: 1- population density in each of these 22 regions based on 2009 yearly census for Tehran, and 2- Urban delinquencies for the year 2009 for these 22 regions. Delinquencies were classified into 5 groups: crime, individual and group fights, thefts (pockets, houses, stores, cars...), and social corruptions (including drug sale, alcoholic beverages. ...).

This is a goal-oriented research. To achieve goals of this study, descriptive and analytic methods were used. Correlations between variables were examined. To analyze the data, statistical methods were used through SPSS software. One of the goals of this research was to analyze the distribution of delinquencies and population density.

Discussion and Results & Conclusion

Study and spatial analysis of urban delinquency in 22 regions of Tehran shows that theft occurs in Tehran more often than other crimes. Secondly, individual and group fights with 24672 cases have

the second rank. The highest rate of individual and group fights happened in region 4. Social delinquencies with 11002 cases have the third rank. The highest number of social delinquencies happened in region 6 with 981 cases. Delinquencies against assets and properties have the fourth rank. The highest rate has occurred in region 12 where central bazaar is located.

Analysis of the correlation between urban delinquencies and population density, with 95 percent confidence level, shows that correlation between population density and crime is $r=0.543$; correlation between population density and individual and group fights is $r=0.292$; correlation between population density and theft is $r=0.215$; correlation between population density and delinquencies against assets and property ownership is $r=0.205$; correlation between population density with social delinquency is $r=0.254$. Results show that crime has the highest correlation with social corruption $r=0.601$; individual and group fights have the highest correlation with social corruption. Thefts are mostly related to assets.

Urban sprawl and rapid metropolitan growth in recent years had consequences such as increase in delinquencies, and crime rates. In fact, urbanization creates more opportunities to commit delinquencies. Results of this research show that because of their particular structures, cultural, and

socio - economic conditions, some regions have more possibility of the emergence of delinquency. In contrast, other regions put barriers to commit delinquencies. Therefore, identifying the spatial conditions that provide opportunities for delinquencies is important. The most important result of this study is that the highest number of delinquencies is related to theft and it happens mostly in regions 4, 3 and 12. Results of the research show that the pattern of distribution follows density pattern. It means that with the increase in population density, urban delinquencies increase too.

Keywords: Spatial analysis, Distribution of Urban Delinquencies, Population Density, Reciprocal Relationships between Delinquencies, Metropolitan Tehran. .

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