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Distribution Pattern of Urban Crimes in Sri Lanka; with Special Reference to Mirihana Police Division

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Abstract

Crime records of arrests and crime events in police stations (police records) are kept manually. No sufficient systems have been still developed for crime mapping, and other types of recording. Therefore, this study focuses on finding out the identification of crime locations, time and the factors that directly and indirectly affect crimes.

Geographic Information System (GIS) uses geography and computer-generated maps as an interface for integrating and accessing massive amounts of location-based information. Hence it plays a very important role in crime mapping and analysis. In addition, GIS allows police personnel to make plans effectively for emergency response, priorities, analyze crime events, and predict future crime control.

The objective of the study is to identify the relationship between crime and geographic environment. In addition, finding out hot spots in a location where different crimes keep occurring over an extended period of time and finding out the location which signals the police personnel to be more attentive.

The Mirihana police station was selected to study the problem using different techniques and secondary and primary data. The analysis was mainly carried out using GPS and GIS techniques.

The relationship between environment and crime is very clear. Specially, road network and commercial clusters and low income settlement areas have a positive relationship and other factors like open space, government institution, parks, grounds etc. have no direct relationship with crimes in the Mirihana Police Division in Sri Lanka.

Keywords: GIS, Crime, Spatial Pattern, Police, Crime Analysis

1. Introduction

The study of crime has traditionally been the preserve of other disciplines such as sociology and psychology and it was not until the late 1970s that the spatial dimension to crime began to be more fully explored. The police have long recognized the inherent geographical component of crimes by sticking pins into maps displayed on walls, where each pin represented a crime event, but it was the studies such as the 'Chicago School' of the 1930s that first demonstrated the importance of geography in understanding crime.

The new trend in techniques identifying patterns and concentrations of crime are related to the topics such as the exploration of the relationships between crime and environmental or socio-economic characteristics and the techniques to assess the effectiveness. Geographic Information System (GIS) uses geography and computer-generated maps as an interface for integrating and accessing massive amounts of location-based information. GIS allows police personnel to plan effectively for emergency response, determine mitigation, priorities, analyze historical events, and predict future events. GIS can also be used to get critical information to emergency responders upon dispatch or while route to an incident to assist in tactical planning and response. GIS plays an important role in crime mapping and analysis. Response capabilities often rely on a variety of data from multiple agencies and sources. The ability to access and process information quickly while displaying it in a spatial and visual medium allows agencies to allocate resources quickly and more effectively. In the establishment of legal information about crimes, the location of a crime, incident, suspect, or victim are often crucial to determine the manner and size of the response. GIS software helps co-ordinate vast amounts of location-based data from multiple sources. It enables the user to layer the data and view the data most critical to particular issues. It is used by police departments all over the world, to provide mapping solutions for crime analysis. In addition, it could help to control criminal tracking, traffic safety, community policing, internet mapping, and numerous other tasks.

The rate of crime events is increasing in all developing countries due to the transform of capability and majestic lifestyle and also due to poor socio-political, and environmental conditions. Naturally, a crime does not disappear by itself. Police departments are on the duty of

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