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SPATIAL PATTERN ANALYSIS IN GEOSPATIAL APPROACH REFERENCE TO KADUWELA MUNICIPAL COUNCIL, SRI LANKA

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Abstract

Cities play a significant role in our lives, providing a place for fulfilling social, economic, a physical needs for more than half of the population in the entire world. The city is a dynamic entity with complex activities, and it faces gradual physical changes or urban growth. Urban growth occurs in a planned or unplanned way. Unplanned urban growth or urban sprawl aggravated huge urban problems in cities and the fringe. Identification of urban growth patterns is significant and measuring and predicting the urban growth in a methodical way is an essential for the decision-making process. Measuring the urban growth pattern is essential and ArcGIS 10 provides an impressive analytical tool for geographic pattern analysis that helps to understand the geographical phenomenon using spatial autocorrelation. Spatial autocorrelation can be applied to detect the pattern of urban areas at a specific time. This study used those tools to analyse spatial pattern in the Sri Lankan urban area. Results show the type of spatial pattern of the area.

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Introduction

With a fast-growing population in this century, an undesirable urban growth has occurred over the world, but in the developing countries, this situation is aggravated and it requires to be addressed seriously. The present urban population in the developing countries is more than half of the population lives in urban areas. All developing countries are responsible for accommodating this surge of population in liveable areas, which they are unable to do in the right way. Therefore urban studies are very important for countries to identify their spatial urban pattern. Many studies have attempted to explain urban growth in diverse ways such as a pattern (Forman, 1995; Coleman, & Freihage, 2001; Heimlich & Anderson, 2001), a process (Gals et al., 2001; Herold, et.al., 2005), a cause and consequence (Barnes et al., 2001; Benfield et al., 1999; Brueckner, 2000; Grimm et al., 2000) and counter measures (Alterman, 1997; Anderson, 1999; Asif & Shachar, 1999; Bhatta, 2009c; Brueckner, 2000; Burby, Nelson, Parker,