JGIS> Vol.3 No.1, January 2011

A GIS-Based Multicriteria Decision Analysis Approach for Mapping Accessibility Patterns of Housing Development Sites: A Case Study in Canmore, Alberta

PDF (Size:508KB) PP. 50-61 DOI: 10.4236/jgis.2011.31004

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ABSTRACT

This paper presents a Geographic Information System (GIS) based multicriteria decision analysis approach for mapping accessibility patterns of housing development sites in Canmore, Alberta. The approach involves integrating two multicriteria decision methods (Analytical Hierarchy Process and Ordered Weighted Aver-aging) in a raster GIS environment, and incorporating the linguistic quantifier concept as a method for ob-taining the order weights. The approach facilitates a wide range of location (decision) strategies to be gener-ated and examined. The aim of the study is to help the housing development authorities in addressing the uncertainty involved in the decision making process, achieving a better understanding of the alternative ac-cessibility patterns. It also assists the authorities in evaluating and prioritizing the potential housing devel-opment sites in terms of accessibility levels.

KEYWORDS

Accessibility; AHP-OWA Procedures; GIS; Housing Development.

Cite this paper

Y. Meng, J. Malczewski and S. Boroushaki, "A GIS-Based Multicriteria Decision Analysis Approach for Mapping Accessibility Patterns of Housing Development Sites: A Case Study in Canmore, Alberta," *Journal of Geographic Information System*, Vol. 3 No. 1, 2011, pp. 50-61. doi: 10.4236/jgis.2011.31004.

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