Geographic information system & spatial analyses in real estate

Synopsis:

The advent of Geographic Information Systems (GIS) now widely available on various computer-based platforms has benefitted numerous fields of discipline, including real estate. Known for its versatility as an integrated system consisting of various functions, GIS is particularly appreciated for its spatial analysis capabilities. As such, GIS is of particular importance to real estate analyses. Inherently spatial, various real estate problems can be more easily dealt with by desynthesising their very essence of concept with respect to location. In this context, GIS provides all the capabilities to capture, store, retrieve, manipulate, analyse, and display geographic data associated with real estate phenomena.

This book is written to provide readers with some examples of such phenomena with which GIS can be used to give some of the answers needed. It demonstrates the use of GIS in dealing with a myriad of location analyses in real estate using mainly local examples in Malaysia, with particular interest in analyses related to urban parking space, market segmentation, site suitability, house price, valuation and appraisal.

Geographic information system & spatial analyses in real estate
Table Of Content:
Preface
PART I: BACKGROUND THEORY
CHAPTER ONE INTRODUCTION
A Brief History of Geographic Information System
Objectives of the Book
Organisation of the Book
CHAPTER TWO WHAT AND WHY GIS
The Concept
Why GIS
Summary
CHAPTER THREE GEOGRAPHIC INFORMATION SYSTEM COMPONENTS
Introduction
Hardware and Software
Data
Institution and People
Policies and Procedure
GIS Sub-Systems or Sub-Functions
Summary

CHAPTER FOUR GEOGRAPHIC INFORMATION SYSTEM AS A TOOL IN REAL ESTATE ANALYSIS
The Basic Concept
Integrated Data Handling in Real Estate
Spatial Analysis Capabilities in Real Estate
Summary
CHAPTER FIVE MAIN STEPS IN CREATING A GIS PROJECT
Introduction
Main Aspects in Creating a GIS Project
Examples
Summary
PART II: SOME EXAMPLES OF APPLICATIONS
CHAPTER SIX SHARED-PARKING TURN-TIME (SPaTT) MODEL FOR ANALYSING PARKING STRESS AND ABUNDANCE WITHIN URBAN COMMERCIAL AREAS
Introduction
Theoretical Framework
The Shared-Parking Turn-Time (SPaTT) Model
Data Analysis Procedure
Data Analysis Procedure
Summary

CHAPTER SEVEN GIS-HEDONIC MODELS OF PRICE-CONTOUR SUB-MARKETS OF RESIDENTIAL PROPERTIES BASED ON NEIGHBOURHOOD CHARACTERISTICS

Introduction

Defining Residential Sub-Markets and Urban Neighbourhood Characteristics Price-Contour Techniques for Demarcating Residential Sub-Markets GIS-Hedonic Analysis Data and Analysis Procedure Results and Discussion Summary CHAPTER EIGHT MODELLING LOCATIONAL FACTORS USING GEOGRAPHIC INFORMATION SYSTEM GENERATED VALUE RESPONSE SURFACE TECHNIQUES TO EXPLAIN AND PREDICT RESIDENTIAL PROPERTY VALUES Introduction Theoretical Framework Data and Analysis Procedure Results and Discussion Summary CHAPTER NINE SITE POTENTIALITY MAPPING FOR PETROL FILLING STATION BASED ON TRAFFIC COUNTS Introduction Theoretical Background Study Area, Data and Methods Results and Discussion Summary CHAPTER TEN DEVELOPMENT OF GIS-BASED INFORMATION SYSTEM AND SPATIAL ANALYSES FOR THE DEVELOPMENT PLANNING OF WAQF PROPERTIES: A MALAYSIAN **CASE** Introduction

The Background Problem
GISWaqf Application Development
Spatial Analysis for Waqf Development
Results and Discussion
Summary
CHAPTER ELEVEN DEVELOPING A GEOGRAPHIC INFORMATION SYSTEM-BASED EXPERT SYSTEM FOR MASS APPRAISAL MODEL
Introduction
GIS, Mass Appraisal and Expert System
Developing an Integrated CAMA and GIS-based Expert System (iCAMA-GIS)
iCAMA-GIS Product and Output System
Summary
CHAPTER TWELVE HEDONIC MODELLING OF HOUSING MARKETS USING GEOGRAPHICAL INFORMATION SYSTEM AND SPATIAL STATISTICS
Introduction
The Study Area and the Data
Estimation of the OLS Models
Detection of Spatial Autocorrelation
Estimation of the Spatial Hedonic Models
Comparing the OLS and the Spatial Hedonic Models
Summary
CHAPTER THIRTEEN INCORPORATION GEOGRAPHIC INFORMATION SYSTEM IN GEOGRAPHICALLY WEIGHTED REGRESSION MODEL FOR MASS APPRAISAL
Introduction

The Concept of GWR

Mixed GWR Model
GWR Model Statistical Test
GWR Software
The Application of the GWR Model
Summary
CHAPTER FOURTEEN INCORPORATING GEOGRAPHIC INFORMATION SYSTEM IN KRIGING MODEL FOR MASS APPRAISAL
Introduction
The Concept of Spatial Interpolation
GIS Interpolation
The Geostatistical Interpolation Concept
Types of Kriging Model
The Kriging Process
Application of the Kriging Model
Summary
CHAPTER FIFTEEN CONCLUDING REMARKS
Introduction
Issues Covered in This Book
Issues for Future Studies
Concluding Comments
REFERENCES
INDEX