

# Modeling Spatial Process of Property Sales in Malaysia

Ebrahim Jahanshiri<sup>1</sup>, Taher Buyong<sup>2</sup>, Abdul Rashid Mohammed Shariff<sup>3</sup>

<sup>1,3</sup> *Geospatial Information Science Research Centre (GIS RC)  
Universiti Putra Malaysia (UPM), 43400 Serdang*

<sup>1</sup>[e.jahanshiri@gmail.com](mailto:e.jahanshiri@gmail.com)

<sup>3</sup>[Rashid@eng.upm.edu.my](mailto:Rashid@eng.upm.edu.my)

<sup>2</sup>*Nine Spatial Resources Sdn Bhd  
40 Jalan Nusaputra 4/2A, Presint 2  
Bandar Nusaputra  
[taherbuyong@yahoo.com](mailto:taherbuyong@yahoo.com)*

## Abstract:

Property sales data like other data with spatial properties, exhibit proximity characteristics. That is, spatial processes are responsible for deriving a value for any given properties. One of these apparent spatial characteristics is the spillover effects through spatial autocorrelation. This phenomenon is shown to have direct impact on the results of modeling the real estate data, rendering the results of simple models like multiple regression analysis biased. In Malaysia, the property data show autocorrelation properties both in the tests of residuals of regression and semivariograms of sales prices. However the results of modeling using spatial autocorrelation in both spatial regression method and geostatistics are not up to par for this type of modeling. In this paper some of the results of the spatial process modeling using the house property sales data are presented and the efficiency of modeling spatial autocorrelation is discussed in contrast to benchmark models like simple linear regression. Possible scenarios that may lead to optimum results from spatial modeling in both streams of autocorrelation modeling are explained and their pros and cons are enumerated. Further suggestions are made to improve the performance of these models through refining the process of modeling the data through treatments of data for the normality is discussed. Lastly, the feasibility of use of the spatial process models in automated systems like computer assisted mass appraisal software are discussed.

Keywords: Spatial process, Autocorrelation, Geostatistics, Spatial regression