The Practice and Exploration of GIS-based Commercial Housing Price Statistical System - The example of Shenzhen

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Abstract

Residential property has become the most important asset class held by residents today. As such, systematic collection and management of accurate price points at the level of each apartment; and noting related price fluctuations have become a new and important trend in real estate statistics.

Taking Shenzhen city as a working example, we expound upon a new concept merging a Geographical Information System (GIS) with statistical analysis of the real estate market, and further present a new real estate price calculation system based on the collection of residential real estate data.

Based on field research, our model established three standard units of comparison: the standard apartment, the standard building, and the standard residential district. These three distinct levels were used as standards for comparison and extrapolation in the establishment of residential price points for the entire city. Using this model, we built a system that could take a sample of actual residential price points for the month, and extrapolate the price of every residential apartment. Further, this system could establish a price index for each type of residential property in each district in the city.

To illustrate the use of this system, we took a sample of residential property price points for the Jingtian District in Shenzhen. The 35,997 results of the system's calculations were indeed consistent with the actual prices we collected. We believe the model and system presented in this paper is of great value to the residential buyer seeking residential pricing information; and furthermore, is a beneficial tool for the government policy maker.

Keywords: GIS, spatial statistics, housing price