



**UNIVERSITI PUTRA MALAYSIA**  
***ALTERNATIVE PROCEDURE OF SALES COMPARISON  
METHOD IN VALUING PROPERTY***

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**ALTERNATIVE PROCEDURE OF SALES COMPARISON METHOD  
IN VALUING PROPERTY**

**By**

**ROHANA ABDUL RAHMAN**

**Thesis Submitted to the School of Graduate Studies, Universiti Putra Malaysia,  
in Fulfilment of the Requirement for the Degree of Doctor of Philosophy**

**December 2013**

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Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfilment  
of the requirement for the degree of Doctor of Philosophy

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The Sales Comparison Method (SCM) is the most widely used method of property valuation; particularly for residential properties. With transaction data becoming more and more accessible, the trend of using Comparison Method will continue; the valuation of commercial properties is expected to also use this method. However, SCM is criticised for its subjectivity with inconsistent prediction; SCM procedure relies too much on the expert judgment of the valuer such that the value of property varies between valuers. This paper puts forward a proposal for an alternative technique using SCM that will minimise subjectivity in property value prediction with reduced complexity.

The aim of this research is to develop a formal automated procedure of the Sale Comparison Method for double storey terrace house. The conceptual procedure was developed by examining peer research, Malaysian Valuation Standard, a standard in use throughout the Valuation and Property Services Department in Malaysia. The research uses this conceptualisation to examine the extent to which a formal procedure can be developed for double storey terrace. Taman Daya and Bandar Mahkota Cheras were chosen due to substantive data in that locality. The conceptualisation translated into an alternative technique follows three steps of property valuation. For the comparable selection, Minkowski metric is used for selecting the best comparable, then Ordinary Least Square (OLS) regression model is used for adjustment of the comparable and lastly weighting strategies for comparable reconciliation.

Seven years data of double storey terrace houses is empirically tested using the alternative procedure and it is found that for 10% estimation range the accuracy of valuation is between 51% and 93% while for 20% estimation range the accuracy of valuation is between 76% and 97%. The finding satisfied the 10% acceptable range

specified by the technical circular of the Valuation Department therefore the result obtained proved that the proposed procedure can be accepted for single valuation purposes. The proposed technique closely resembles the existing procedure to gain the confidence of valuers; however, tasks that require judgments from valuers are substituted with statistical methods. This technique avoids the often criticised complexities of the new SCM variants. Integration of this formal implementation with Geographic Information System (GIS) resulted of an automated valuation model (AVM). AVM is more accurate and less human bias also can reduce cost of operation and can realized quick valuation compared to valuation exercised manually.



Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia  
sebagai memenuhi keperluan untuk ijazah Doktor Falsafah

**PROSEDUR ALTERNATIF UNTUK KAEDAH PERBANDINGAN  
DALAM PENILAIAN HARTA TANAH**

Oleh

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Kaedah Perbandingan (KP) adalah cara menjalankan penilaian harta tanah yang digunakan secara meluas terutamanya untuk harta tanah kediaman. Transaksi harta tanah semakin mudah diperolehi menjadikan harta tanah lain seperti hartanah komersil juga cenderung menggunakan kaedah perbandingan. Walau bagaimanapun, Kaedah Perbandingan sering dikritik kerana anggaran harga yang tidak konsisten dan mempunyai unsur-unsur subjektif kerana Kaedah Perbandingan banyak bergantung kepada pendapat dan anggaran pakar harta tanah dan ini menyebabkan nilai seorang penilai dengan penilai yang lain adalah berbeza-beza. Kajian ini mencadangkan teknik alternatif bagi kaedah perbandingan yang dapat mengurangkan subjektiviti serta lebih mudah untuk menentukan nilai hartanah. Tujuan kajian ini untuk membina prosedur formal untuk kaedah penilaian bagi rumah teres dua tingkat. Konsep ini dibuat berasaskan kajian sebelumnya dan standard amalan penilaian yang digunakan di Malaysia. Hartanah di Taman Daya dan Bandar Mahkota Cheras dianalisa kerana kesesuaian data di kawasan ini. Kaedah penilaian diterjemahkan kepada kaedah automasi terhadap tiga tahap penilaian hartanah. Pemilihan perbandingan akan menggunakan Minkowski metrik bagi memilih perbandingan terbaik. Model regresi Ordinary Least Square (OLS) pula digunakan untuk menentukan koefisien perbandingan dan yang terakhir strategi pemberat digunakan untuk penentuan penilaian terbaik.

Data rumah teres dua tingkat bagi tempoh tujuh tahun digunakan bagi menguji prosedur alternatif ini dan didapati bagi anggaran 10% variasi, ketepatan penilaian adalah antara 51% hingga 93% manakala bagi anggaran 20% variasi, ketepatan penilaian adalah antara 76% hingga 97%. Hasil analisis yang diperolehi menepati 10% varian yang ditentukan oleh pekiling teknikal Jabatan Penilaian. Jadi, analisis yang diperolehi membuktikan prosedur yang disarankan boleh diterima untuk maksud penilaian hartanah. Teknik yang disarankan ini menyamai prosedur sedia ada yang dapat memberi keyakinan kepada para penilai hartanah kerana andaian dari penilai digantikan

dengan kaedah berstatistik. Kaedah ini juga dapat mengelakkan kritik terhadap variasi kaedah perbandingan sedia ada.

Integrasi implementasi ini menghasilkan model automasi penilaian (AVM) apabila integrasi bersama *Geographic Information System (GIS)* dijalankan. Model automasi penilaian ini adalah tepat, kurang bias dari kesilapan manusia, dapat mengurangkan kos operasi dan penilaian dihasilkan lebih cepat berbanding dengan kaedah manual sedia ada.



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This thesis submitted to the Senate of Universiti Putra Malaysia and has been accepted as fulfilment of the requirement for the degree of Doctor of Philosophy. The members of the Supervisory Committee were as follows:

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