

**THE IMPLEMENTATION OF AUTOMATED VALUATION MODELS
AMONG VALUATION FIRMS IN PENINSULAR MALAYSIA**

GANESHKUMAR A/L SUNDERAJOO

UNIVERSITI TEKNOLOGI MALAYSIA

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AMONG VALUATION FIRMS IN PENINSULAR MALAYSIA**

GANESHKUMAR A/L SUNDERAJOO

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requirements for the award of the degree of
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DEDICATION

To my beloved mother and father,
Mr and Mrs. Sunderajoo

To my respected supervisor,
Dr. Muhammad Najib bin Mohd. Razali

To all my lecturers who have guided me throughout my master studies,
Lecturers of Faculty of Geoinformation and Real Estate

To my fellow coursemates who have given me lots of support

To all the valuers who have been very supportive and helpful

To all the individuals who have helped me directly and indirectly with this research

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ABSTRACT

Automated Valuation Models (AVMs) are computer-based systems which encompass all data concerning real estate in a particular area and are capable of producing more consistent valuation reports within a short time. Traditional valuation methods employed by valuers somewhat delay the valuation process. For this reason, this research aims to identify the features AVMs in generating reasonable and relevant estimates of market value. This study focuses only on 346 firms located in Peninsular Malaysia with the purpose of discern their awareness on the existence of AVMs. Analysis of data was made based on questionnaire survey returned by the respondents. The SPSS 23.0 software was used to carry out the quantitative analysis. To consolidate the research finding, interview sessions were held with valuation firms and the qualitative analysis was conducted by using Nvivo 8.0 software. This study will evaluate the significant differences between the valuation firms whether or not they are aware of the AVMs. The finding from this study will conclude the level of implementation of AVMs in Malaysia.

ABSTRAK

Automated Valuation Models (AVMs) adalah sistem berasaskan komputer yang mengandungi kesemua data berkaitan harta tanah di sesuatu kawasan dan berupaya menghasilkan laporan penilaian yang lebih konsisten dalam masa yang singkat. Kaedah penilaian traditional yang dipakai oleh penilai melambatkan proses penilaian. Disebabkan hal ini, kajian ini bermotifkan untuk mengenal pasti ciri-ciri AVMs dalam menghasilkan satu nilai pasaran yang munasabah dan relevan. Kajian ini hanya berfokuskan 346 firma penilaian yang terdapat di Semenanjung Malaysia dengan tujuan untuk mengenalpasti tahap kesedaran mereka mengenai kewujudan AVMs. Analisis data dilakukan berdasarkan borang soal selidik yang dikembalikan oleh responden. Perisian SPSS 23.0 telah digunakan untuk melakukan analisis kuantitatif. Untuk mengukuhkan dapatan dari kajian, sesi temubual telah dikendalikan di firma penilaian dan analisis kualitatif data ini dilakukan menerusi perisian Nvivo 8.0. Kajian ini akan menilai perbezaan ketara antara firma penilaian jika mereka sedar atau tidak mengenai AVMs. Hasil kajian ini akan menyimpulkan tahap pelaksanaan AVMs di Malaysia.

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LIST OF ABBREVIATIONS

AVMs	Automated Valuation Models
ANNs	Artificial Neural Networks
BOVAEA	Board of Valuers, Estate Agents and Appraisers
CVIMS	Customized Valuation Information Management System
GIS	Geographic Information System
GINs	Geo-Information Neural System
SPSS	Statistical Package for Social Science

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CHAPTER 1

INTRODUCTION

1.1 Background of Study

The valuation practice in Malaysia is governed by the valuers, appraisers and estate agents Act 1981 (Act 242) which provides for the registration of valuers, appraisers and estate agents with the Board of Valuers, Appraisers and Estate Agents. Only registered valuer who is registered with the Board of Valuers, Appraisers and Estate Agents that are issued with an authority to practise by the Board are allowed to undertake valuations of land and buildings, including furniture, fixtures, trade stocks, plant or machinery and other effects for any purpose. Normally, property is transacted based on its market value. Market value is the price a property would make if offered for sale at the date of valuation under the conditions that meets the requirements of the Market Value definition. Unless he or she is instructed to do otherwise, the valuer shall use the market value basis of valuation for all valuation purposes.

Market Value is the estimated amount for which a property should exchange on the date of valuation between a specific willing buyer and a specific willing seller in an arm's-length business deal after proper marketing wherein the parties had each acted without compulsion, prudently and knowledgeably. To estimate market value of a property, a valuer must first estimate its highest and best use, or most probable use.

According to the Malaysian Valuation Standards (2000), valuation is defined as an opinion or a written assumption upon capital value or rental value based on any basis by taking into account real estate interest following with or without any presumption or condition. The normal valuation process practiced by valuers starts with a site visit to the property that is intended to be valued. Next, market conditions of the stated property at the time of visit and in the future will be studied and analyzed. Therefore, a valuation report will be prepared based on an appropriate traditional valuation method which leads to the market value of the property.

However, all the regular steps faced by valuers in the valuation process gradually decrease with the introduction of an Automated Valuation Model (AVM). An AVM is a valuation model that is based on statistics where it assists in calculating property value based on a huge amount of data. The data consists of transaction information, previous valuation data, socio-demography information and data from the respective land administration offices. (Muhammad Faisal Ibrahim et al, 2001)

Abdul Ghani Sarip (2003) mentioned the factors such as property features, location, quality and other economy factors influence the supply and demand in real estate. Therefore, the usage of Automated Valuation Models can help the valuers to create an accurate valuation in a shorter time frame. According to John Cooper (1991), the usage of statistical analysis in computer could strengthen the objective and consistency and also can increase the accuracy of the decision making process in valuation.

The index model is more known as repeat sales model is one of the different methods where it needs previous transaction data on the subject lot. Then, this model will then estimate the current market price and also the future market price. Therefore, the AVMs will make the work of a valuer much easier in conducting analysis and valuation that is more appropriate for a given property in a shorter time at a lower cost. This research aims to identify the features of AVMs in generating reasonable and relevant estimates of market value.

1.2 Problem Statement

According to the Valuation and Property Service Departments (JPPH), between 1999 and 2014, the House Price Index has been on an increase in all states, particularly in Kuala Lumpur, Selangor, Penang, Negeri Sembilan, Perak and Johor. Transactions of residential properties have also steadily increased from 2001 to 2014, with a peak from 2011 to 2012. There has been a big increase in the number of properties ranging from residential, commercial, industrial and landed properties in the last 20 years due to the evolution of the property market itself. This is concentrated mostly around the areas of Penang, Kuala Lumpur, Johor and other main cities in Malaysia. Therefore, the valuation need to be carried out for these type of properties and considering the large number of properties in hand to be valued, using traditional valuation method may take a whole lot of time.

The manual methods used by valuers are the basis in any valuation process but it takes longer time to get the transaction data and there is a problem in arriving at the best estimate price for the valuation of a certain property. Some valuers in Malaysia do not believe fully on the valuation report produced by AVMs where there exist doubts on the level of accuracy of the data provided. The most critical problem arise when there are none who are ready to know more about AVMs and where they tend to give up at an early stage as they apply this model in their valuation work. However, it must be noted that the property industry is evolving where more automation is needed to value the increasing number of properties. Valuers have to be more flexible and be less traditional about the valuation process to complement the fact that clients need valuation report as early as fast as possible

On top of that, the features of AVMs are not clearly known and the knowledge level of this system is still limited. Only the popular and big firms could apply these AVMs effectively. The question here is how much is the level of usage of AVMs among the valuation firms in Peninsular Malaysia and if the market value generated by AVMs is reasonable and effective to be applied in Peninsular Malaysia.

The usage of AVMs among the valuation firms in Malaysia in the organizational level of firms is still unknown. If there is an AVM system in place, how much does this system is in place needs to be known. As a nation progressing towards Vision 2020, the industry has to be based on K-economy where production of goods and services is based primarily upon knowledge-intensive activities. Therefore, valuation firms need to incorporate the use of AVMs in their daily life. They need to be more knowledge intensive than labour intensive and let the technology play its part. As a result, their prestige as a valuer will increase and the acceptance of AVMs among valuation firms will increase.

Therefore in conclusion, the accuracy of the valuation report produced by AVM and usage of AVMs across valuation firms with the level of its implementation using Information Technology in the workplace need to be known. The way AVMs affect the productivity of the firm in creating a good and accurate valuation report must be understood.

1.3 Research Question

This research seeks to attain answers to the following questions:

- i) What are the characteristics of Automated Valuation Model in producing a good valuation report?
- ii) How does AVM technology help to increase the productivity of the valuation firm to solve valuation cases?
- iii) How far is the awareness on the implementation of AVMs among valuation firms in Peninsular Malaysia?

1.4 Research Objective

The objective of this study is to:

- i) Identify the characteristics of AVMs in producing a good valuation report
- ii) Study how the AVM technology helps to increase productivity of the valuation firm to solve valuation cases
- iii) Study the awareness of the implementation of AVMs among valuation firms in Peninsular Malaysia

1.5 Scope of Study

This study is carried out to determine the level of awareness on the implementation of the AVMs among valuation firms in Peninsular Malaysia only. The study comprises 346 valuation firms in Peninsular Malaysia. Respondents for this research study will comprise of registered valuation firms in Peninsular Malaysia. The sampling technique used will be Taro Yamane technique. The software that will be used for quantitative analysis will be SPSS 23.0 and Nvivo 8.0 for qualitative analysis.

1.6 Limitations of the Study

This study has several limitations. Firstly, the study involves only valuation firms operating in Peninsular Malaysia. Secondly, this study will not go into depth about the modelling technique used by the AVM but only about the use of AVM in increasing the productivity of the firm.

1.7 Significance of Study

This study can provide a clearer picture about the features and uses of AVMs to valuation firms who have not considered or had no intention of applying this system in their practices. This study can also benefit the parties who are interested or motivated by the subject of this research to invent far better AVM software most suited for the real estate market in Peninsular Malaysia.

1.8 Research Methodology

For the purpose of this research, the methodology adopted includes the theoretical and empirical approach. Literature reviews on previous studies regarding the usage of AVMs were carried out. Primary data were sourced through questionnaire survey where valuation firms were selected from the population in the study area and SPSS software will be used to analyze the quantitative data and be presented in graphical form. Frequency analysis, descriptive analysis and cross-tabulation tests were carried out. Finally, chi-square test was performed to study the significant difference between respondents who are aware of the AVMs usage and those who have never heard of them. Besides that, interview sessions were held with a smaller sample of valuation firms to know more about the usage of AVMs and to know more about their views and opinions on AVMs. The results were analyzed qualitatively using the Nvivo 8.0 software. Finally, conclusion and further recommendations were made based on the observation and findings.

1.9 Thesis Organization

This thesis is made up of five chapters where the contexts are briefly discussed as follows:

The first chapter provides an overview of the research work which is set out to achieve the research objectives. It starts with the background of the study, statement of the problem, research question, research objectives, scope of the study, limitations of the study, significance of the study, brief methodology as well as the chapter layout.

The second chapter gives account of the theoretical framework of the research. It begins with the concept of valuation, features of the AVMs, previous studies related to the AVMs and the different kinds of AVMs tools in the market and more.

The third chapter describes in detail the methodology adopted for the study, this includes brief description of the study area, the study population, research design and methodology, sampling technique used, sources and method of data collection and the analysis.

The fourth chapter covers the data analysis which was carried out quantitatively and qualitatively. This includes the graphical depiction of the results from the questionnaire and interviews and discussion of it.

The fifth chapter is the concluding chapter of the thesis which provides a summary of the research findings, the research conclusions as well as useful recommendations for further studies.

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