PalArch's Journal of Archaeology of Egypt / Egyptology

FACTORS AFFECTING HOUSING PRICES IN MALAYSIA

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Norani binti Amit*, Hasimah binti Sapiri, Zahayu binti Md Yusof : Factors Affecting Housing Prices In Malaysia -- Palarch's Journal Of Archaeology Of Egypt/Egyptology 17(6). ISSN 1567-214x

Keywords: Housing Price, Affordable Housing, Factor Analysis

ABSTRACT

Housing prices in Malaysia are greatly influenced by various factors, both internal and external. The increase in housing prices has led to the existence of affordable housings, especially for the middle-class society. However, this "affordable housing" is no longer affordable to most Malaysians due to a sharp rise in house prices. Therefore, this research aims to determine factors affecting housing prices in Malaysia. This research was carried out by using questionnaire surveys with 100 respondents consisting of homebuyers participated in this survey. Factor analysis has been used and all the 46 items. Accordingly, the factor analysis final outcome was five factors, namely; financial assistance, housing performance, housing motivational, housing market and housing policy. The result obtained has proven that the instrument has high reliability and validity. The findings from this research can be used as a guideline for the policymakers, developers, urban planners, contractors and homebuyers in creating strategies to deliver affordable housing prices in the future.

INTRODUCTION

As a developing country, Malaysia has been experiencing major economic developments particularly in recent years which led to the growing housing demand. Over the past ten years, along with rapid technological

changes and skyrocketing construction costs, the price of housing in Malaysia also experienced a steep rise. The rise in housing prices is also caused by strict environmental policies and the entry of innovative and state-of-the-art designs into the industry [1]. Reviewed by Osmadi *et al.* [2] using secondary data derived from the National Property Information Centre (NAPIC), the price of houses in Malaysia is determined by the population, the prevalence of demand and supply, location, physical topography, access convenience, developer, material costs and income. The imbalance between the high costs of home ownership and the low annual income of the general population has long been a major debate [3]. A majority of the populace has raised concerns of their inability to own a home because of the exorbitant property prices. The dearth of sufficient and reasonably priced housing has become a serious issue in this country. Due to the increase in prices, housing prices problems become one of the important topics being studied among academicians. Among popular issues that arise in the housing sector are financial assistance [3-5], housing performance [6-9], housing motivational [10-12], housing market [13-15] and housing policy [16-18], to name only a few.

To date, there are many literatures has grown up in the field of housing price in Malaysia. Ong [3] in his study measure the relationship between macroeconomic variables and the housing price. Variables selected include gross domestic product (GDP), population, inflations rate, costs of construction, interest rate and real property gains tax (RPGT). This result shows that gross domestic product (GDP), population and RPGT are significantly influences to the housing prices in Malaysia. Another research by Saad et al. [19] focused on developer's point of view among contributing factors involved in determining housing price in Kuala Muda, Kedah. Among the risk factors that need to be addressed are construction costs, location, financial assistance and government policy. The results show that the location, financial assistance, construction costs and government policy affect housing prices in Kuala Muda District from the point of view of developers. Meanwhile, Ganeson and Ab Muin [20] was conducted the study where macroeconomic factors were seen to be the determining factors on the movement of house prices in Malaysia. The independent variables selected are gross domestic product, inflation, unemployment rate and population to signify its relationship with the house price index. The results from this study shows that only inflation rate and unemployment rate are statistically significant to determine the house price index in Malaysia. Therefore, this study aims to determine the factors that affecting housing prices in Malaysia by using Exploratory Factor Analysis (EFA). Structured questionnaire items were used to find the variables that affecting housing prices rather than reproduce variables from previous studies. EFA attempts to specified construct for independent variables together in which questionnaires are used that consist of a lot of questions (variables).

In general, researchers measure house pricing changes based on numerous factors and using different methods. Most researchers focus on

micro-economic, macro-economic and demographic factors as well as government policies in explaining the phenomena [19-22]. Recent literatures are concerned with three general approaches that may be used to measure house price indexes, namely; stratification, hedonics and repeat sales method [23-24]. These methods measure the average price of houses sold in a given period. Olczyk et al. [25] stated that the problem with repeat sales method is the risk of bias. For instance, when there is an increase in the sales of highly-priced houses between two periods but the prices remain the same, there will be an increase in inaccurate pricing. Effective analysis were applied through data properties, study design, and the questions to be addressed, all have an orientation on which methods will yield the greatest advantage in determining factors that associated to the housing prices [26]. Therefore, Exploratory Factor Analysis (EFA) is suitable to be used when the factor structure is not known [27-28]. In other words, it does not have any previsions or concrete hypotheses about the number of factors and their relationship [29]. Many researchers [30-35] used factor analysis for assessment of the factor structure. This research provides a preliminary overview of the factors that may affect the housing prices in Malaysia.

METHODOLOGY

This is an exploratory study utilizing a quantitative method. Data collection is carried out using survey questionnaire that was distributed to a sample of 100 respondents. In this research, the respondents entail homebuyers or potential homebuyers. Based on the general rule, the sample size is deemed as sufficient based on the minimum size suggested by Sander et al. [36], i.e. 5 samples per variable. Sample selection is broadly based on two approaches namely probability and non-probability [37-38]. This current study utilizes the non-probability sampling technique which is a convenience sampling technique whereby the samples are conveniently selected at the location where the researcher is carrying out the data collection process [39].

For the purpose of this study, the newly designed questionnaire survey forms were self-administered. There are 4 parts to the questionnaire i.e. Parts A to D. Part A captures the respondent's demographic profile entailing their age, gender, ethnicity, marital status and highest education level. The respondents were also asked about whether they are a homeowner or otherwise. Part B inquires about the respondents' current employment background including their occupation, current gross monthly salary, gross annual salary and total years of working experience. Part C entails questions about the respondents' current residence in terms of type of house, total years of living there and whether the house is their own, rented, family-owned or others. If the respondent is a homeowner, two sub-parts will follow entailing questions about the price of the house, how it was acquired, and its monthly mortgage. Lastly, Part D inquires about the respondents' opinion about certain housing attributes and the extent to which those attributes influence the price of houses. The

answers are measured using a 5-point Likert scale ranging from 'strongly disagree' to 'strongly agree'.

The data analysis comprised of demographic information, Exploratory Factor Analysis (EFA) and reliability testing. Cudeck [40] delineated factor analysis as a group of methods for elucidating the relationships between a set of variables as affected by several key factors. Factor analysis is typically used in categorizing variables based on analogous correlational patterns [41-42]. Factor analysis aims to identify the basic factors affecting a group of variables, quantifying the degree to which each factor affects the variable and attaining more information of their nature by determining the exact factor that affects a given variable. The analysis aims to classify the variables into sub-groups that are potentially different from the others, but are identical within its own. Factor analysis mainly conceptualizes that multiple observed variables possess analogous response patterns due to their linkage with a fundamental latent variable, a complex factor to measure.

RESULTS

Descriptive Statistics

The descriptive statistics delivered in this study entails the frequency and percentages of the respondents' demographic profiles which are described in terms of gender, age, occupation, monthly income and education level. Out of the total respondents, 24% are males and the majority of 76% are females. In terms of age, the respondents are between 20 and 64 years old. Most are in the age group of 25-34 years old (42%) and 35-44 years old (40%) followed by 45-54 years old (9%), less than 24 years old (5%) and 55-64 years old (4%). The survey questionnaire was especially designed for homeowners or household members who are knowledgeable about the details of their houses. A total of 57% of the respondents are public sector workers followed by private sector workers (34%), self-employed (8%) and others (1%). Figure 1 shows the respondents' monthly income level ranging between RM 3,001 and RM 4,000 (18%), RM 2,001 - RM 3,000 (16%) and RM 6,001 - RM 7,000 (15%). A total of 43% of the respondents have a Master's degree while 38% are Bachelor's degree holders as shown in Figure 2.

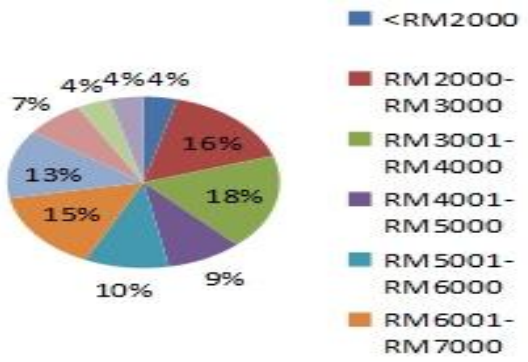

Figure 1 Monthly Income

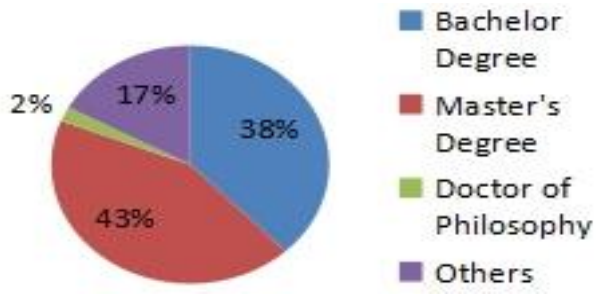

Figure 2 Level of Education

Factor Analysis

Factor analysis was generated to discover the factors affecting housing prices in Malaysia. The factorability of the overall matrix was determined using Bartlett's test of sphericity and the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy. The value derived from the Bartlett's test of sphericity was found to be significant (p=0.000) as shown in Table 1. In addition, the KMO measure was 0.910 which is greater than 0.6. Kim *et al.* [43] stated that the value that acceptable for KMO is above 0.6. Based on these results, factor ability was assumed [36]. Factor Analysis was performed to determine the factors that affect the decision of buyers to purchase a house.

Table 1 KMO and Bartlett's Test

Kaiser-Meyer-Olkin	Measure of Sampling Adequacy	.910
Bartlett's Test of Sohericity	Approx. Chi-Square	5994.620
	df	1035
	Sig	.000

The Total Variance Explained in Table 2 showed that there were seven components with initial Eigenvalues more than 1.0. The first component explained 57.73% of the total variance, 64.43% for second component, 68.94% for third component, 72.43% for fourth component, 75.68% for fifth component, followed by 78.63% and 81.34% respectively.

Table 2 Factor Showing the Eigenvalues and Variance Explained

Factors	Eigenvalues	Variance Explained
F1	26.56	57.73

F2	3.08	64.43
F3	2.08	68.94
F4	1.60	72.43
F5	1.50	75.68
F6	1.36	78.63
F7	1.24	81.34

Table 3 demonstrated all the factors related to the housing price. Based on Table 3, the initial communalities denote the correlation between the variable and all other variables before rotation. Communalities can be explained as a continuation of factor loadings, meaning that the communality of a variable is the sum of the loadings of this variable on all extracted factors [44]. If the majority of the communalities are low (< 0.30), it is likely that a small sample size will misrepresent the outcomes. The analysis shows that there are 46 items related to the housing price factors; it shows that all 46 items had initial communalities greater than 0.30, as it is a good sign. The communalities values for the entire 46 questionnaire items ranged between 0.581 to 0.896; thus, all the questionnaire items are retained and are under the acceptable limits [45]. Instead of 7 components are listed, only 5 components are available which mean a total of 46 items were succeed to meet a criterion.

Table 3 Factor Structure, Communalities and Factor Loading of Items

No	Item	Communalities	Factor Loading				
			Financial Assistance	Housing Performance	Housing Motivation	Housing Market	Housing Policy
1	Down payment	.581	.380				
2	Deposits	.735	.380				
3	Commitments	.859	.917				
4	Housing Loan	.879	.925				
5	Insufficient Mortgage	.871	.975				
6	Real Property Gains Tax (RPGT)	.858	.507				
7	Developer Interest Bearing Scheme (DIBS)	.856	.517				
8	Base Lending Rate (BLR)	.866	.678				
9	Loan to Value Ration (LTV)	.867	.654				
10	Cooling Measure	.842	.595				

11	Shop	.880	.908			
12	Supermarket	.888	.904			
13	Public Infrastructure	.886	.786			
14	Public Transportation	.752	.721			
15	School	.764	.616			
16	Work	.765	.383			
17	Crime Rate	.816	.434			
18	Safety	.878	.367			
19	Pollutants	.793	.667			
20	Society	.837	.363			
21	Environment	.848	.389			
22	Built Up	.851	.729			
23	Living Area	.877	.739			
24	Dining Area	.863	.793			
25	Bathrooms	.835	.727			
26	Rooms	.846	.501			
27	Internal Structure	.789	.509			
28	External Structure	.817	.416			
29	Financial Return	.805		.277		
30	Investment Instrument	.841		.210		
31	Necessity	.706		.209		
32	Reselling	.754		.128		
33	Early Working	.745		.648		
34	Expensive	.749			.305	
35	Overvaluation	.861			.408	
36	Housing Cost	.851			.460	
37	Volatility	.840			.407	
38	Material & Construction	.653			.515	
39	Foreign Investors	.726			.518	
40	Existence Policy	.765				.662
41	Purpose Policy	.774				.793
42	Change Housing Policy	.793				.617
43	Financial Literacy	.798				.688
44	Housing Schemes	.780				.641
45	Home Ownership	.884				.733
46	Controlling Policy	.896				.637

Based on the factor loading results, the researcher indicates that there are five important factors that can be related to the housing prices in Malaysia. The first factor is referred to the financial assistance. According to Chen et al. [46], household income is correlated to house price and both significantly affect housing affordability. Apart from that, Central Bank of Malaysia stated that the financial institution needs to ensure that the mortgage repayment for the bank cannot exceed a third of their monthly gross income (30%). Meanwhile, the second factor found is housing performance. For this research, housing performance consists of locational component, structural component and neighbourhood component. Kim et al. [47] suggested that the housing performance measurement model which is based on the indicators of housing environment, housing function, and housing comfort.

The third factor involved is housing motivation. Motivation has been an important reason in the explanation of home owning [48]. There is much evidence that home owning associated with motivation. Home become an investment because it gives the financial return through rental payment from tenants [46] or through capital growth since increased price of the property due to higher demand [49]. The fourth factor entails the housing market of which volatility has raised a lot of concerns in recent times. Leung et al. [50] recommended that supply elasticity differences can justify the variations in house price volatility. In the context of major US cities, the authors found that supply elasticity has a negative and significant effect on housing volatility. The fifth factor is related to the housing policy. The Ministry of Housing and Local Government in Malaysia had initiated the National Housing Policy (NHP) which provides sufficient, comfortable, quality and affordable housing for the public so as to improve their quality of life. The objective is to provide an opportunity for all Malaysians especially those in the lower income groups to have access to proper housing. This is to address the imbalance in prevailing housing needs particularly for the low-income and middle-income groups considering that home ownership affordability is linked to the income and the market prices of houses.

Reliability Test

The reliability of the questionnaire depends on the internal homogeneity of the set items as measured by Cronbach‘s coefficient. Cronbach’s Alpha was used to interpret and explain the reliability among the variables measured. Cronbach‘s coefficient was also used to measure the reliability of the dimensions of factors affecting housing prices. Coefficient values of more than 0.7 are considered acceptable, but 0.6 is deemed acceptable as well for developing the new questionnaire [51]. The values of the Cronbach‘s alpha are shown in Table 4.

Table 4 Cronbach’s Alpha of Items

Factors	Cronbach’s Alpha value

Financial Assistance	.922
Housing Performance	.974
Housing Motivation	.866
Housing Market	.939
Housing Policy	.939

Therefore, it can be concluded that the five factors studied are consistent and thus reliable for measuring the housing prices. The collective Cronbach's alpha reliability for the first factor is 0.922 consisting of ten items, while the second factor consisting of 18 items has a Cronbach's alpha of 0.974. The third factor consisting of five items has a Cronbach's alpha of 0.866, while the fourth (six items) and fifth (seven items) factors have the same Cronbach's alpha values of 0.939.

CONCLUSIONS

Issues pertaining to housing prices have been among the major concerns for house buyers in Malaysia. This research was conducted to determine the factors influencing the price of houses in Malaysia. The factors identified are financial assistance, housing performance, housing motivational, housing market and housing policy. With regards to previous literatures and comprehensive reviews on housing prices, all these factors are found to be important in determining and measuring the price of houses in Malaysia, which has been increasing from year to year. In order to stabilize the housing price, housing industry experts need to observe the matter from the perspective of homebuyers. This research offers beneficial and practical guidelines for the housing industry stakeholders and field researchers. Besides that, this research could help homebuyers to understand the causes of the rising price of houses in Malaysia.

ACKNOWLEDGEMENT

The authors are grateful for the financial support received from Ministry of Higher Education Malaysia under the Fundamental Research Grant Scheme (S/O Code: 14368). We also thank the anonymous reviewers for their useful suggestions.

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