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The Impact of Housing Development, Location and Building Specification towards House Prices in Malaysia

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Abstract

The research investigates the influence of housing development, location, and building specifications towards house prices in Malaysia from the perspectives of real estate developers. Questionnaire responses indicate that housing development factors are important indicators in setting the price of developed houses. Location is believed to be a significant indicator where the availability of public infrastructure and amenities cause housing prices to be set higher due to its curb appeal. On the other hand, building specifications including square footage, architectural design, security aspect, and landscaping are also believed to be influential. For house prices remain affordable in the country, development regulation and related bureaucracies should be relaxed. Joint ventures between the developers, government agencies, and foreign investors to develop affordable housing in the country should also be encouraged. Public facilities and a good transportation system made available in the outskirts may disperse the high demand for houses to prevent demand from being concentrated in city areas.

Keywords: Housing development, location, building specification, house price

JEL codes: R00, R31, R53

Introduction

Malaysia's housing market is an essential element of the nation's economy (Bank Negara, 2012). Apart from its attractiveness as a form of investment (Krulický & Horák, 2019), the housing market is becoming increasingly important in shaping the social being (Straszheim, 1975). Housing's significant impact on the health, wealth, and stability of economies is undeniable (Braun et al., 2021). However, Malaysia has seen long-term house price increases that affect house affordability (Bank Negara Malaysia, 2017). Due to the mismatch between the level of household income and house price, the country is experiencing the problem of unsold properties worth over RM18 billion as of 2020 (Valuation and Property Services Department, 2020). Various parties have expressed concern over the matter of unsold properties, including lawmakers (Daim, 2021). The

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government has implemented numerous initiatives to promote house ownership including the development of affordable housing through projects such as PR1MA and Program Rumah Mesra Rakyat; additionally the government has assisted in house financing through the collaboration of various financial institutions (Bernama, 2022). Despite the efforts, the Malaysian housing market is still considered severely unaffordable (Ismail et al., 2019). This leads to an important question: what factors influence house prices in Malaysia?

According to Kamal et al. (2016), several factors influence house price, including housing development related industries and location factors. This is similar to Heyman (2019) who stated that efforts to assess the worth of a house are known to be heavily influenced by location. In addition, house price could also be influenced by its features (Elam, 2012) and characteristics (Wittowsky, 2020). These include the external features of the house or curb appeals (Sirman et al., 2005), accessibility (Hess & Almeida, 2007), and landscape (Hussain et al., 2014). Housing heterogeneity, which refers to the technical and socio-economic differences of dwellings (Vanags et al., 2017) is recognized by many researchers as a factor in describing the uniqueness of each housing market.

Despite various attempts made in assessing the impact of housing development, location, and house specification abroad, the number of studies conducted in Malaysia on this subject is rather limited. Thus far, several studies that have been done are focused on certain areas only. Notably, such studies include those by MacDonald (2011), Hussain et al. (2014), and Kamal et al. (2016). Further, due to the heterogeneous nature of the housing market (Rosen, 1974; Vanags et al., 2017), findings based on research that conducted abroad cannot be implied as similar for the case of Malaysia and this has provided the basis for further research into the topic.

Thus, the objective of the current study is to investigate the impact of housing development, location, and housing specifications on house prices in Malaysia. In addition to providing academic insights, the findings may be useful to policymakers in constructing strategies that are related to the Malaysian housing market.

The rest of this paper is structured as follows: Section 2 reviews prior research on the impact of housing development, location, and specifications on housing prices. Section 3 presents data and descriptive statistical methods. Section 4 shows estimation results, and Section 5 summarizes the analysis.

Literature Review

The role of the housing development has been investigated for years. Financial barriers (Sharam et al, 2015), fuel prices and materials (Magnusson and Makdessi, 2019), and labour (Moh, 2022) on house price are believed to be significant in determining house prices. Braun et al. (2015) identified the influence of different financial intermediaries on housing market cycles. They argued that residential real estate market, where only conventional banks serve as financial intermediaries, and without the existence of building and loan associations, is volatile. Another important factor on the housing development spectrum is labour. Osei and Winters (2018) found that housing prices responded positively to labour demand shocks and had significant effects on housing prices during the 2002-2007 housing boom in the United States. Wade (2021) stated that house prices are also explained by labour through the aspect of labour costs; developers absorb the increase in

labour cost by setting higher house prices. Alabi and Fapohunda (2021) found construction cost instabilities and an increase in maintenance costs due to poor workmanship are key factors in the cost increase of building materials for affordable home delivery.

Strongly connected with the hedonic pricing method, location is also considered to be an important determinant. Lisi and Iacobini (2020) state that location, together with the size of the property, influence house prices the most. Duran et al. (2011) believe that this connection is explained by the transportation cost in terms of money, time, and inconveniences, which are then reflected in lower prices of residential property. Furthermore, location is also associated with the neighbourhood concept where people are concerned about their immediate surroundings, such as the overall condition of their street and the qualities of their neighbours (Kiel and Zabel, 2008); these may also affect house pricing (Schelling, 1969).

House price is also associated with building specification. Sirmans et al. (2006) and Zietz et al. (2007) demonstrate that lot size and square footage have impact on house price in a certain area. Turnbull et al. (2006) postulate that in accordance with consumption theory, larger houses command higher prices and smaller dwellings command lower prices. Other factors that are associated with building specification are security (Vetter et al, 2013), landscape (Hussain et al., 2014), and amenities (Crompton and Nichols, 2020).

In sum, housing development, locations, and building specifications are important factors that can explain house prices. In the case of Malaysia, the influence of these variables on house prices has rarely been examined.

Data and Methodology

To analyze the impact of housing development, location, and building specification on house prices, survey questionnaires were distributed to real estate developers in Malaysia. Developers chosen were based on the list from the Real Estate & Housing Developers' Association (REHDA) Malaysia, the Sabah Housing and Real Estate Developers Association (SHAREDA), and Sarawak Housing and Real Estate Developers' Association (SHEDA).

The survey questionnaire was developed by adapting Kamal et al. (2016) who analyzed the topic in state of Penang. Meanwhile, the current study investigated the factors in the case of Malaysia and added 21 more items to improve the survey questionnaire.[2]

A pilot study was also conducted to determine its suitability before being distributed to respondents across the country. Due to the movement control restrictions in the country, responses were collected by telephone interview. In total, 41 respondents across Malaysia responded to the questionnaire. Subsequent to data collection, data cleaning process and testing were conducted. Data was analyzed to provide descriptive statistics and the following tables present results of the data analysis.

[2] There are 7 items adapted from Kamal et al. (2016)

Background of Respondents

Table 1 Developers background information

Variable	Description	Number of respondents	Percent
Position	Assistant Manager	20	48.8
	Manager	19	46.3
	Senior Manager	2	4.9
Gender	Female	12	29.3
	Male	29	70.7
Ethnicity	Bumiputra Sabah	4	9.8
	Chinese	22	53.7
	Malay	15	36.6
Education	Bachelor	25	61
	Diploma	13	32
	Master	3	7
Work Experience (Years)	0 to 5	8	19.5
	6 to 10	24	58.5
	11 to 20	7	17
	over 20	2	4.9
Type of Ownership	Private Limited (Sdn. Bhd.)	39	95.1
	Limited Co. (Bhd.)	2	4.9
Firm Establishment (Years)	0 to 5	2	4.9
	6 to 10	7	17.1
	11 to 20	10	24.4
	21 to 30	12	29.3
	over 30	10	24.4
Business Operation	National	8	19.5
	State	33	80.5
Project Type	Commercial	1	2.4
	Residential	24	58.5
	Infrastructure	1	2.4
	Mixed Projects	15	36.6

Table 1 shows that most of the respondents are manager and assistant managers, with more than half being male. In terms of ethnicity, the majority of the respondents are Chinese, and 41 percent of the respondents are holders of bachelor degrees. All respondents have relevant work experience, with more than half working in the industry for 6 years and more. The majority of the companies where the respondents are employed are private limited companies, established more than 10 years, and operating in at leastthe state level. More than half of the companies are also involved in residential development projects.

Result Analysis

There are 28 specific questions of the questionnaire that are focusing on housing development, location, and building specification. The questionnaire is constructed based on a 5-point Likert scale from scale - 1 represents strongly disagree to scale - 5 represents strongly agree.

Housing development

Table 2 Response on the impact of housing development

Housing Development	Minimum	Maximum	Mean	Std. Deviation	Majority Scale
1. Regulatory barriers (such as planning permissions, building plan permission, etc.) made by the authority have increased the development cost and influenced housing price.	1	5	3.56	1.119	4
2. Stringent financial requirements (to obtain loans from the financial institutions to fund the housing project) have increased the development cost and influenced housing prices.	1	5	3.61	1.093	4
3. Collaboration or joint ventures between authorities and developers have reduced development costs.	1	5	3.85	0.760	4
4. Poor coordination between developers and utilities and services providers have increased development costs and influenced housing price	2	5	4.07	0.721	4
5. The erratic power supply has increased construction costs and influenced housing prices.	2	5	4.20	0.782	4
6. The high cost of fuel has increased construction costs and influenced housing prices.	2	5	4.41	0.670	5
7. The professional and highly skilled labour hired for the project has increased construction costs and influenced the housing price.	3	5	4.10	0.539	4
8. The number of labours involved in the project has increased construction costs and influenced housing prices.	2	5	3.83	0.738	4
9. The cost of housing development is higher when local labours are used compared to foreign labours.	2	5	3.78	0.652	4
10. The inadequately qualified labours have increased development costs and influenced housing prices.	2	5	3.73	0.593	4
11. The inadequate mechanisation in constructing housing projects has increased the cost of housing development and influenced housing prices.	2	5	3.95	0.498	4
12. Price of materials and components has increased construction costs and increased housing prices.	3	5	4.66	0.575	5

Table 2 indicates that a majority of the developers agree that regulatory barriers imposed by the authority have increased development cost and influenced housing price; this yielded an average response of 3.56 points. In addition, developers also stated that stringent financial requirements to obtain loans from financial institutions to fund housing projects have increased development costs and influenced housing price; the results yield the average response of 3.61 points.

On the other hand, most developers believe that collaboration or joint ventures between authorities and developers reduce development cost, while poor coordination between developers, and utilities and services providers increased development costs and influenced housing price; the average response is shown at 4.07 points. The majority of the developers also state that increases in construction costs due to erratic power supply and the high cost of fuel cause house prices to increase; the average responses are 4.50 and 4.41 points on these issues, respectively.

In consideration of the impact of labour, the current research surveys the effects of skill levels on construction costs and house prices. Most developers agree that highly skilled labour increase construction costs and influence housing prices. This result is similar to that of the effect of the number of labour, where the average response is 3.83 points. The majority of developers agree that the costs involved in hiring local labour is higher than in hiring foreigners, with an average response of 3.73 points. The inadequacy of qualified labour and the mechanisation in constructing housing projects are also deemed to be important factors, with an average response of 0.593 and 0.498, respectively. Price of material and components are also said to increase construction costs and increase housing prices, where responses averaged at 4.66 points.

Location and building specification

Table 3 Response on location and building specification

Location and building specification	Minimum	Maximum	Mean	Std. Deviation	Majority Scale
13. Proper public infrastructure existing near the housing area is important and contributes to the housing price.	1	5	4.22	0.962	4
14. Proper public infrastructure planned near the housing area is important and contributes to the housing price.	1	5	4.2	1.005	5
15. Availability of amenities (sporting facilities, playground, etc.) included in the housing project influence our decision on price.	1	5	4.12	0.980	4
16. Availability of amenities (sporting facilities, playground, etc.) near the housing area influences our decision on price.	1	5	4.00	0.975	4
17. Amenities (sporting facilities, playground, etc.) planned near the housing area influence our decision on price.	2	5	3.88	0.927	4
18. Availability of dis-amenities (noise, dust, smoke etc.) near the housing area influence our decision on price.	1	5	3.93	0.848	4
19. Landscaping influences our decision on price.	4	5	4.46	0.505	4
20. Housing types (terrace, apartment, detached, semi-detached, etc.) influences our decision in determining the housing price.	4	5	4.78	0.419	5
21. Housing architectural design influences our decision in determining the housing price.	3	5	4.22	0.525	4

22. The number of rooms influences our decision in determining the housing price	3	5	4.32	0.650	4
23. The size of rooms influences our decision in determining the housing price	2	5	4.27	0.742	4
24. The size of the house influences our decision in determining the housing price	4	5	4.61	0.494	5
25. The security aspects (burglary alarm, CCTV, guards, gate and fences, etc.) influences our decision in determining the housing price.	3	5	4.39	0.771	4
26. The space organization (view, sunlight distribution) influences our decision in determining the housing price.	2	5	4.20	0.641	4
27. The market price of other real estates with similar types influences our decision in determining the housing price.	4	5	4.68	0.471	5
28. Quality of the construction contributes to the housing price.	2	5	4.71	0.642	5

Table 3 shows that the majority of developers agree that public infrastructure that are existing and/or are planned near the housing area are important factors and contribute to the prices of housing. The average response is 4.2 points. Planned or the availability of amenities included and near a housing project influence the develper's decision on pricing. Similarly, disamenities near the housing area also influence house price.

In addition, a majority of the developers believe that landscaping, housing types and architectural design are important factors; the average responses are 4.46, 4.78, and 4.22 points, respectively. The number and sizes of rooms and houses are also considered to be contributing factors to house prices, with the majority of developers responses averaging between 4 to 5 points.

Most developers believe that the consideration of cost incurred in providing the security and the expectation of higher demand of it, influences house prices, which is similar to the effects of space organization.

In addition, when taking into account similar houses by constructed by other developers, the market price of other real estates with similar type influences exhibits a mean response of 4.68 which signals its importance. Finally, the quality of house construction also contributes to house prices; this yield an average response of 4.71 points.

Conclusion

The current study investigates the impact of housing development, location, and building specification on house price from the perspectives of housing developers. The findings are consistent with findings in previous studies. Based on the feedback from sampled respondents, housing development factors play an important role in explaining the movement of house prices; factors including housing regulatory and financial barriers, power supply, prices of fuel and materials, and labour may increase development costs and influence the prices of housing.

In addition, the current study identifies location factors, including the availability of

current and proposed infrastructures as well as disamenities, either inside or near the housing area as factors that influence developers' decisions on house pricing. Building specification that includes landscaping, architectural design and quality, number and sizes of room, and security aspects are also found to be important factors.

In addressing the issue of house affordability in the country, collaboration between the government and housing developers are important. The current paper supports the introduction of mechanisms that may promote affordable housing development, including relaxing certain degrees of financial barriers, development and labour regulations for affordable housing. Access to public amenities especially in the urban area, and public transportation should be improved and extended to the suburbs to reduce immense pressure on prices in the housing market. Such actions may allow residents working in the city to choose housing in the outskirt areas where house prices are more affordable.

Although the number of respondents in the current study is small, the findings may prove insightful. It is hoped that future studies may increase sample sizes to obtain bigger sample analysis. Further, other socioeconomic factors may be included in future studies.

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References

Alabi, B., & Fapohunda, J. (2021). Effects of increase in the cost of building materials on the delivery of affordable housing in South Africa. *Sustainability*, *13*(4), 1772. https://doi.org/10.3390/su13041772

Bernama. (2022). The Country Needs to Review the Financing Model to Facilitate Home Ownership – PM. Astro Awani. https://www.astroawani.com/berita-malaysia/bank-negara-perlu-lihat-kembali-model-pembiayaan-untuk-mudahkan-pemilikan-rumah-pm-346084

Braun, J., Burghof, H.-P., Sommervoll, D. E., & Langer, J. (2021). The Impact of different Financial Intermediaries on Housing Market Cycles. *Available at SSRN 3973714*, 32. https://dx.doi.org/10.2139/ssrn.3973714

Daim, N. (2021). RM19.75 billion worth of unsold houses in Malaysia. New Straits Times https://www.nst.com.my/news/nation/2021/11/747941/rm1975-billion-worth-unsold-houses-malaysia-nsttv

Department, V. a. P. S. (2020). Property market report 2020. Ministry of Finance Malaysia. http://rehda.com/wp-content/uploads/2021/07/JPPH-Property-Market-Report-2020.pdf

Durán, N., Marcato, P. D., Durán, M., Yadav, A., Gade, A., & Rai, M. (2011). Mechanistic aspects in the biogenic synthesis of extracellular metal nanoparticles by peptides, bacteria, fungi, and plants. *Applied microbiology and biotechnology*, *90*(5), 1609-1624. https://doi.org/10.1007/s00253-011-3249-8

Elam, E., & Stigarll, A. (2012). Landscape and house appearance impacts on the price of single-family houses. *Journal of Environmental Horticulture*, *30*(4), 182-188.

https://doi.org/10.24266/0738-2898.30.4.182
Hess, D. B., & Almeida, T. M. (2007). Impact of proximity to light rail rapid transit on station-area property values in Buffalo, New York. *Urban studies*, *44*(5-6), 1041-1068. https://doi.org/10.1080/00420980701256005
Heyman, A. V., & Sommervoll, D. E. (2019). House prices and relative location. *Cities*, *95*, 102373. https://doi.org/10.1016/j.cities.2019.06.004
Hussain, M. R. M., Tukiman, I., Zen, I. H., & Shahli, F. M. (2014). The Impact of Landscape Design on House Prices and Values in Residential Development in Urban Areas. *APCBEE Procedia*, *10*, 316-320. https://doi.org/10.1016/j.apcbee.2014.10.059
Ismail, S. (2019). Rethinking Housing: Between State, Market and Society. In (Vol. 3-57): Khazanah Research Institute: Kuala Lumpur, Malaysia.
Jahandar Lashaki, M., Hashisho, Z., Phillips, J. H., Crompton, D., Anderson, J. E., & Nichols, M. (2020). Mechanisms of heel buildup during cyclic adsorption-desorption of volatile organic compounds in a full-scale adsorber-desorber. *Chemical Engineering Journal*, *400*, 124937. https://doi.org/10.1016/j.cej.2020.124937
Kamal, E. M., Hassan, H., & Osmadi, A. (2016). Factors influencing the housing price: developers' perspective. *International Journal of Humanities and Social Sciences*, *10*(5), 1676-1682. https://doi.org/10.5281/zenodo.1124527
Kiel, K. A., & Zabel, J. E. (2008). Location, location, location: The 3L Approach to house price determination. *Journal of Housing Economics*, *17*(2), 175-190. https://doi.org/10.1016/j.jhe.2007.12.002
Krulický, T., & Horák, J. (2019). Real estate as an investment asset. *SHS Web of Conferences. 61* (pp. 01011). EDP Sciences. https://doi.org/10.1051/shsconf/20196101011
Lisi, G., & Iacobini, M. (2020). Measuring the Effect of Location on House Prices in Italy. *Regional Economic Development Research*, *1*(2), 54-62. https://doi.org/10.37256/redr.122020260
MacDonald, S. (2011). Drivers of house price inflation in Penang, Malaysia: Planning a more sustainable future. *Penang Institute Research Paper*, 1-27. https://penanginstitute.org/wp-content/uploads/jml/files/research_papers/Drivers_of_house_price_inflation.pdf
Magnusson, A., & Makdessi, L. (2019). Is there a relationship between oil prices and house price inflation? In (pp. 41).
Malaysia, B. N. (2011). *Financial stability and payment system report 2010*. Bank Negara Malaysia.
Malaysia, B. N. (2017). Fourth Quarterly Bulletin BNM. Kuala Lumpur: Bank Negara Malaysia.
Moh, J. (2022). Pressure from rising cost of building materials and labour. The Sundaily https://www.thesundaily.my/home/pressure-from-rising-cost-of-building-materials-and-labour-LN8780836
Osei, M. J., & Winters, J. V. (2018). Labor Demand Shocks and Housing Prices across the US: Does One Size Fit All? , 26. https://dx.doi.org/10.2139/ssrn.3209733
Rosen, S. (1974). Hedonic prices and implicit markets: product differentiation in pure competition. *Journal of political economy*, *82*(1), 34-55. https://doi.org/10.1086/260169
Schelling, T. C. (1969). Models of segregation. *The American economic review*, *59*(2), 488-493. https://www.jstor.org/stable/1823701
Sharam, A., Bryant, L. E., & Alves, T. (2015). Identifying the financial barriers to deliberative, affordable apartment development in Australia. *International Journal of Housing Markets and Analysis*, *8*(4), 471-483. https://doi.org/10.1108/IJHMA-10-2014-0041

Sirmans, G. S., MacDonald, L., Macpherson, D. A., & Zietz, E. N. (2006). The value of housing characteristics: a meta analysis. *The Journal of Real Estate Finance and Economics, 33*(3), 215-240. https://doi.org/10.1007/s11146-006-9983-5

Straszheim, M. R. (1975). Front matter," An Econometric Analysis of the Urban Housing Market". In *An Econometric Analysis of the Urban Housing Market* (pp. -16-10). NBER. https://www.nber.org/system/files/chapters/c0976/c0976.pdf

Turnbull, G. K., Dombrow, J., & Sirmans, C. F. (2006). Big house, little house: relative size and value. *Real Estate Economics, 34*(3), 439-456. https://doi.org/10.1111/j.1540-6229.2006.00173.x

Vanags, J., Geipele, I., Sarkans, A., & Usenieks, D. (2017). Housing heterogeneity dimensions and their elements: a systemic approach. *Baltic Journal of Real Estate Economics and Construction Management, 5*(1), 23-37. https://doi.org/10.1515/bjreecm-2017-0003

Vetter, D. M., Beltrão, K. I., & Massena, R. (2013). The impact of the sense of security from crime on residential property values in Brazilian metropolitan areas. 68. https://dx.doi.org/10.2139/ssrn.2367688

Wade, T. (2021). Understanding the national increase in house prices. American Action Forum. https://www.americanactionforum.org/insight/understanding-the-national-increase-in-house-prices/

Wittowsky, D., Hoekveld, J., Welsch, J., & Steier, M. (2020). Residential housing prices: impact of housing characteristics, accessibility and neighbouring apartments–a case study of Dortmund, Germany. *Urban, Planning and Transport Research, 8*(1), 44-70. https://doi.org/10.1080/21650020.2019.1704429

Zietz, J., Zietz, E. N., & Sirmans, G. S. (2008). Determinants of house prices: a quantile regression approach. *The Journal of Real Estate Finance and Economics, 37*(4), 317-333. https://doi.org/10.1007/s11146-007-9053-7