



PLANNING MALAYSIA:

Journal of the Malaysian Institute of Planners

VOLUME 23 ISSUE 6 (2025), Page 76 – 90

URBAN HOUSING AFFORDABILITY: ANALYZING THE IMPACT OF AFFORDABLE HOUSING SCHEMES ON HOUSING PRICES

**Ahmad Fawwaz Saleh^{1*}, Rohayu Ab Majid², Norbaya Ab Rahim³,
Khairul Afzan Lazi⁴, Nuratiqah Aisyah Awang⁵**

*^{1,5}Centre for Sustainable Planning and Real Estate (SUPRE),
Faculty of Built Environment,
UNIVERSITI MALAYA, MALAYSIA*

*^{2, 3}College of Built Environment,
UNIVERSITI TEKNOLOGI MARA, MALAYSIA*

*⁴Faculty of Civil Engineering,
UNIVERSITI OF TECHNOLOGY, MALAYSIA*

Abstract

Housing affordability remains a critical issue in urban areas, where rising demand and limited supply drive property prices upward. Governments have introduced affordable housing schemes to address these challenges, but their effectiveness hinges on alignment with local market conditions and demand-side factors such as financial capability, government regulation on affordable housing, and location preferences. Despite their importance, few studies have examined the specific attributes of affordable housing schemes and their impact on housing prices. This study bridges this gap by investigating the relationship between affordable housing prices and housing demand, employing a mixed-methods approach and using correlation and regression analysis, an initial framework of 15 attributes was evaluated, categorized under financial approvals, government regulations, and location preferences. The results reveal that nine attributes significantly influence housing prices within affordable housing schemes. Key factors include credit history, down payment, loan margin, approval location, qualification requirements, and procedural complexities, all of which exhibit strong correlations with housing prices. These findings underscore the need for policymakers to refine regulatory mechanisms to better align with the financial capabilities of homebuyers. By addressing these factors, housing policies can be tailored to enhance affordability and promote sustainable housing development.

Keywords: Housing prices, affordable housing scheme, location preferences, financial approval, demand factors

¹ Corresponding author. Email: fawwaz@um.edu.my

INTRODUCTION

The continuous increase in housing prices has emerged as a global challenge, affecting both developed and developing country. In Malaysia this trend has significant affected towards development and market prices of affordable housing scheme in urban areas (Saleh et al., 2024). Housing demand turned to exercise certain issues especially for low- and middle-income buyers to own houses nearby or in the city. While governments worldwide have introduced affordable housing schemes to mitigate these challenges, aiming to provide low- and middle-income households with access to decent and affordable homes. However, the effectiveness of these schemes is often undermined by the complex interplay between housing prices and demand-side factors, such as buyer preferences, regulation, and location attributes (Majid et al., 2023). In Kuala Lumpur, high demand of affordable housing scheme due to existence facilities and amenities in urban areas and land scarcity drive market dynamics especially on housing prices.

Furthermore, these challenges turn to the balance in between availability of the housing or land and types of homes that people want to proceed with the affordable housing scheme. For housing supply, stakeholders like financial institutions for providing housing loan together with housing developers and government plays a complex regulatory environment towards ownership, tenure and housing design (Saleh et al., 2022). These regulatory indirectly translate into higher development cost that passed on to the buyers. For instance, housing developers frequently offset losses from subsidized affordable units by increasing the prices of market-rate homes—a phenomenon known as "cost-shifting" (Urban Institute, 2020). Meanwhile for housing demand, preferences of buyers on financial approvals like interest rate, loan tenure, bureaucratic procedure to apply these types of housing, and location further shape fluctuation of housing market. Middle income housing buyers, for example, often prioritize proximity to jobs and public transit, while some emphasize space, school quality, and affordability (Julien et al., 2025).

Although extensive research on housing price determinants, significant gaps remain. Previous studies rely mostly on secondary data to analyze market trends and housing supply side (Darendra & Riyanto, 2025; Berawi et al., 2022; Batog et al., 2013; 2019). Earlier studies have systematically compared suburban markets, even though these geographies operate under distinct regulatory, economic, and social logics. For example, urban markets are characterized by high demand for limited land, whereas suburban markets face challenges related to infrastructure accessibility and sprawl (Saleh et al., 2016). While prior studies have addressed general macroeconomic variables (Malpezzi, 2002); geographical location (Mukhtar et al., 2025); Structural attributes (Saleh et al., 2024), they failed to focus on local regulations contexts. This research tends to fill the gaps by focusing on local regulatory context, which examining current procedure set

by current government. Other than that, by understanding the impact between housing prices in certain areas recognised in Klang Valley and factors influence on housing demand it is critical for creating effective guiding principle for this research. The study highlighted these gaps by employing additional regulation attributes align with the local context used mixed methods integrating secondary data on housing prices and questionnaire feedbacks from housing buyer. The research takes to answer important key question: what factor impacts on housing demand that suitable with local context; how do housing demand preferences influence housing prices in urban areas and which mediate this relationship? By combining insights from analysis of market data transactions in Klang Valley specifically under housing that already been categories as affordable housing scheme and feedback through questionnaires from housing buyers, the study provides holistic understanding towards housing market dynamics and segmentation.

LITERATURE REVIEW

Affordable Housing

According to Cambridge Dictionary (2019) affordable housing define as houses that can be bought or rented by people who do not earn a lot of money. Globally, affordable housing is accepted that have financially accessible to low-and middle-income that costing not more than 30% of households gross income. (Majid et al., 2023; Glaeser & Gyourko, 2003). Unlike, term of housing affordability which describe as the relationship between housing expenditures and household income. For Malaysia, a list of projects that consider as affordable housing scheme were PR1MA, PPAM, Rumah Selangorku etc. Federal and state Governments often implement affordable housing schemes to ensure that such housing can meet housing needs, particularly in urban areas where high demand and limited supply drive prices upward (Malpezzi & Vandell, 2002). These schemes may include subsidies and incentives for housing developer that aimed to control price and reduce the financial burden of households (Quigley & Raphael, 2004). However, the effectiveness of these initiatives often depends on their alignment with local market conditions and demand-side factors, such as income levels and household preferences (Green et al., 2018).

Factors affecting housing prices

Previous research indicates that location, structural features and environment factors are the key attributes that affect property value (Riyanto et al., 2021). Other than that, Gyourko and Molloy (2015) argue that stringent government regulations—including affordable housing regulation, construction specifications, and zoning restrictions—result in increased building costs that are

subsequently transferred to homebuyers. These attributes may negatively and positively give impacts to property values (Kauko, 2003).

The first main and initial factors is the financial approvals and regulation of getting housing loan. The nature of local financial institution in order to approve housing loan are mostly dependent on the incomes of the applicant. From here, the decision for applicant on whether to proceed to buy an affordable housing scheme that has been offered to them usually been determined by the loan margin, in which refer to the percentage of the housing loan that has been approved. Typically, 100% for the first time homebuyers, however due to certain reason it might sometimes reduced to 90%. As the result, the remaining 10% has had to be paid in cash by the applicant to the housing developers. Other attributes in this financial regulation have also included loan tenure, credit history and financial procedures themselves (Saleh et. al., 2024).

The second factors affecting housing prices is the regulation subjected to affordable housing itself. In Malaysia, different affordable housing scheme has different approach to apply. Projects for PPAM (Perumahan Penjawat Awam Malaysia) for example are purposely for government servant. Meanwhile, project for Rumah Selangorku only for those who categorised as Selangor residents. Applicant must either be born in Selangor or have lived in Selangor for certain period (LPHS, 2020). Other than that, attributes inside this second factors, that might influence housing demand was selling price levied for affordable housing, condition executed for affordable housing, current procedure to apply affordable housing and approval location for affordable housing (Majid et al., 2023; Saleh et al., 2017)

Lastly, geographical location. Location is arguably one of the critical determinant of housing prices. Properties situated in city centers or near to major employment hubs, transportation nodes, and quality educational facilities typically command in high value of property. Cheshire and Sheppard (2004) argue that the spatial location of a property is intrinsically linked to its market value, as proximity to economic opportunities and essential amenities increases housing demand. Saleh et al. (2022) expand on this view by demonstrating traffic conditions, accessibility of highway, amenities and facilities. Most studies previously try to measure the relationship between property prices and their distance to others places (Crespo & Gret-Regamey, 2013; Dai et al., 2020; Darendra & Riyanto, 2025), but often overlooking the locational accessibility (Mukhtar et al., 2025).

Empirical Models in Housing Price Analysis

Empirical analysis in housing economics has increasingly adopted hedonic pricing models to disentangle the effects of various determinants on housing prices (Darendra & Riyanto, 2025). It all started with the widespread

development of housing models by several scholars, including Lancaster (1966) and Rosen (1974) which have been widely used to evaluate the attributes influencing product prices, based on the assumption that housing supply and demand are in equilibrium. Meanwhile, Leong, Preston, and Rice (2005), in contrast, successfully identified different concepts for measuring housing gaps. Rosen's (1974) foundational work laid the groundwork for subsequent studies that employ regression techniques to isolate the influence of regulatory, product, and locational factors. Meanwhile, previous researchers have used the same model to understand the factors contributing to house price gaps. This paper seeks to bridge that gap by providing empirical evidence that quantifies the specific impacts of these factors on urban housing prices over the past decade. By comparing housing prices and demand factors is crucial for understanding affordability challenges and market dynamics towards those people who lived in this scheme.

RESEARCH METHODOLOGY

The mixed methods were conducted to determine the significant factors influencing housing demand and housing prices. A questionnaire survey was randomly distributed to 400 homebuyers across various affordable housing schemes in urban areas of Klang Valley, Malaysia. For the sample size based on data gathered from Dewan Bandaraya Kuala Lumpur (DBKL) approximately 47,009 residents represented as homebuyers were recorded in several areas selected within Klang Valley. According to Krysik and Finn (2013), the common research for social science standard for the confidence level is 95%. For this research, with a confidence level of 95% and a margin of error of $\pm 5\%$, the required minimum sample size is 398 respondents at least. Other than that, to assess this relationship, several areas in Klang Valley were selected as a sample study area for this research. These areas were chosen based on the existing projects of affordable housing in those areas. Additionally, the transaction prices that were collected from National Property Information Centre (NAPIC) on 2024 as a reference to measure the relationship. The location and market data were compiled in table below;

Table 1: Average prices according to areas in Klang Valley

Area	Average Price Sqft (RM)	Built up areas (psf)
AS1	341.9	530.66
AS2	338.7	688.89
AS4	316.8	527.86
AS5	485.4	1302.43
AS6	476.9	1399.31
AS10	252.9	534.97

Previous studies on methodology of housing prices analysis employed from simple correlation analysis to wide range of approaches like econometrics (Hadavandi et al., 2011). Traditional methods include correlation analysis mostly explores basic determinant between housing prices with income (Malpezzi, 2002). However, regression methods remain the most widely used in managing data of structural, location and local attributes. Meanwhile, for this research, the collected data was analyzed using the Statistical Package for Social Sciences (SPSS) to assess the relationships between housing demand factors and price levels through regression analysis. The study measured the significance of demand-side factors by evaluating the strength of the relationship through correlation (r), coefficient of determination (R^2) value, path Coefficient (β), effect size (f), P-value (Sig.) and Significant coefficient. In the light of the following research, the hypothesis included;

- H^1 - *Housing price have a significant impact on homebuyers' perspectives when purchasing affordable houses.*

In addition to develop the model, this study combines a few relevant attributes to justify the relationship between housing prices as dependent variables and factors influencing housing demand as independent variables. The attributes were gathered through past studies and relevant features that subjected to the context of affordable housing scheme in Malaysia. The initial conceptual framework is shown in Figure 1.

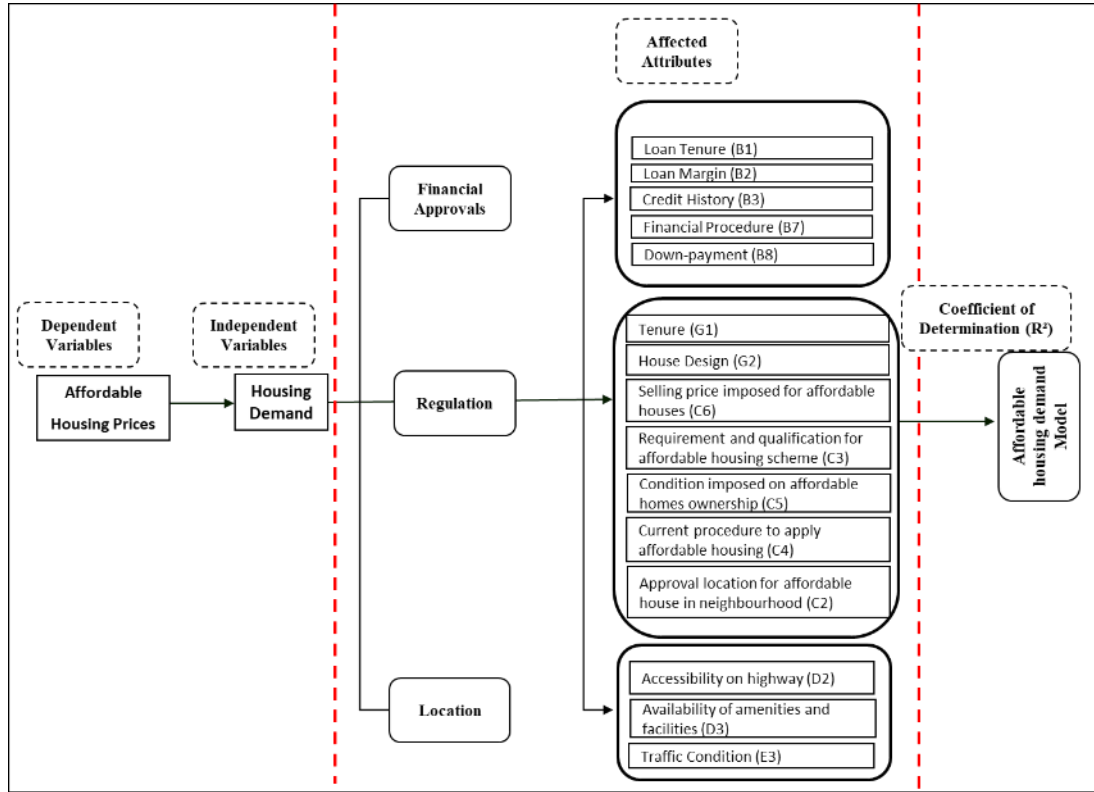


Figure 1: Conceptual and Research framework (Author Self-compilation)

The figure above presents the initial research framework, which was put together after considering various factors relevant to the local context in Malaysia. Three main factors that included totalled of 15 attributes. The regression model formula for this research can be outlined as below;

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \dots + \beta_\gamma X_\gamma + \epsilon$$

Where;

Y = Dependent variable; House Prices

X = X₁*, X₂*, X₃*, .. X_γ = Independent variable; Attributes of housing demand

β₀, β₁, β₂, β₃, ...β_γ = Parameters of the variables

ε = Error estimation

A previous study stated that key norms to be considered prior to conducting regression analysis include normality result, homoscedasticity,

residual patterns, missing data, and the number of outliers in variables (Pallant, 2005). Based on this, the researcher selected some recommendation to ensure viability of data were accomplished. With a large sample, if only a few outlying residuals are found, taking corrective action may not be necessary (Pallant, 2005). Therefore, the researcher will proceed to the next step of conducting normality tests.

RESULT AND DISCUSSION

Normality test

Table 2 show the result whether the residuals (errors) follow a normal distribution, which is an assumption in many regression models;

Table 2: Normality Result			
Variable	Normal distribution		Status
	Skewness	Kurtosis	
Financial Approvals	-1.386	.551	Normal
Government Regulation	-1.440	.542	Normal
Location	-1.583	1.071	Normal
House Price	1.025	1.782	Normal

In the result presented above, the skewness and Kurtosis were purposely to measure the normal distribution for the data within the sampled areas. Julie Pallant (2005) highlights that if the distribution is perfectly normal, the result from skewness and kurtosis might obtain value of 0. However, based on Hair et al. (2011) the minimum substantial for skewness and kurtosis is below ± 2 , respectively. Therefore, from the result above the data can declared as normally distributed.

Correlation analysis with dependent variables

Table 3 show the correlation between housing prices and factor influence housing demand. According to Cohen (2013) the negative sign refers only for the path of the relationship not the strength;

Table 3: Correlation of Housing demand on house price

Variables	Pearson Correlation (r)	Sig.2-Tailed	Relationship
House Price			
Financial Approvals	-0.501	0.000*	Negative and Strong
Government Regulation	-0.511	0.000*	Negative and Strong
Location	-0.373	0.000*	Negative and Moderate

Cohen et al. (2013) provide a guideline for interpreting correlation strength: correlations between ± 0.10 to ± 0.29 are considered weak, ± 0.30 to ± 0.49 are moderate, and ± 0.50 and above are strong. This helps determine the strength of relationships between variables in statistical analysis. The correlation results indicate that financial approvals (-0.501) and government regulations (-0.511) have a strong negative impact on house prices, meaning stricter loan approvals and tighter regulations lead to lower prices. Location (-0.373) has a moderate negative effect, suggesting that less desirable locations are indirectly lead to lower house prices, but other factors also play a role. From the result above, direction of correlation plays the significant reason in which suggesting; *The more increasing in house price they have, the less housing demand they experience* or vice versa. It indirectly suggests that attention should be focus on government regulation and financial approvals in which government should consider balancing regulatory measures and credit accessibility to ensure a stable affordable housing market being apply. All relationships are statistically significant ($p = 0.000$), highlighting that demand-side constraints significantly influence house prices, with financial and regulatory factors being the most impactful. From this strong result, the coefficient results will be continuing to explore the data.

The standardise coefficient of the fifteen attributed will be explain in Table 4;

Table 4: Coefficient result of Housing demand attributes with house prices

Regression Analysis between House Price				
House Price	Beta	t	Sig. A	Ranks
House Design (G2)	-.141	-2.080	.004	9
Tenure (G1)	.128	1.882	.058	Not Sig.
Loan Margin (B2)	.244	3.374	.001	3
Credit History (B3)	-.408	-5.255	.000	1
Loan Tenure (B1)	-.045	-.574	.567	Not Sig.
Down Payment (B8)	-.299	-3.652	.000	2
Financial Procedure (B7)	.148	2.092	.002	4
Requirement and qualification for affordable housing scheme (C3)	-.174	-2.414	.004	7
Current procedure to apply for affordable houses (C4)	.159	2.135	.004	8
Condition imposed on affordable homes ownership (C5)	.097	1.430	.153	Not Sig.
Approval location for affordable houses in the neighbourhood (C2)	-.224	-2.979	.003	5
Selling price imposed for affordable houses (C6)	.002	.025	.980	Not Sig.
Regression Analysis between House Price				
House Price	Beta	t	Sig. A	Ranks
Availability of amenities and facilities (D3)	.042	.555	.579	Not Sig.
Accessibility to highways (D2)	-.051	-.733	.464	Not Sig.
Traffic Condition	-.201	-328	.001	6

A closer observation of the specific variables shows that only nine attributes were significantly associated with house price (below p-value) and comprising both negative and positive relationship. The highest prediction value were score by factor in financial approval which are credit history ($\beta = -0.408$, t-test=-5.255, $p < 0.05$), followed by down payment ($\beta = -0.299$, t-test=-3.652, $p < 0.05$) and loan margin ($\beta = 0.244$, t-test=3.374, $p < 0.05$) with financial procedure provided positive relation with house price ($\beta = 0.148$, t-test=2.092, $p < 0.05$). If there are positive correlation, the result revealed that when there is an increase of 1 percent for loan margin and financial procedure, the house price will increase by 0.244 percent and 0.148. Whilst, if there are negative reaction like credit history and downpayment, the result predicted that when there is an increase of one percent for both, the house price will decrease at 0.408 percent and 0.299 percent.

Next, the result was then indicated government regulation as a second main factors that has high dependency with house price. The attributes begin with, approval location for affordable houses in neighbourhood ($\beta = -0.224$, $t\text{-test} = -2.979$, $p < 0.05$), but followed with different main factors that comes from location which is traffic condition at ($\beta = -0.201$, $t\text{-test} = -3.328$, $p < 0.05$). The score then indicated requirement and qualification for affordable housing scheme ($\beta = -0.174$, $t\text{-test} = -2.414$, $p < 0.05$) and current procedure involve to apply for affordable houses ($\beta = 0.129$, $t\text{-test} = 2.135$, $p < 0.05$) which the only attributed in government factors provided positive reaction. Since most the attributes provided negative correlation with house price, the result theoretically portrays that when there is an increase of one percent for approval location, traffic condition, requirement and qualification for affordable houses, the house price will decrease by 0.224 percent, 0.201 percent and 0.174 percent. Whilst the lowest prediction value shows house design at $\beta = -0.129$, $t\text{-test} = -2.135$. Even, from government regulation 'tenure' has provided high score of correlation with housing demand profiles the coefficient result provided difference interpretation which above then significance value. Tenure provided a positive result of $\beta = 0.128$, $t\text{-test} = 1.882$, $p > 0.05$, followed with condition imposed on affordable homes ($\beta = 0.097$, $t\text{-test} = 1.430$, $p > 0.05$), Access to highway ($\beta = -0.051$, $t\text{-test} = -0.733$, $p > 0.05$), loan tenure ($\beta = -0.045$, $t\text{-test} = -0.574$, $p > 0.05$), availability of amenities and facilities ($\beta = -0.042$, $t\text{-test} = -0.555$, $p > 0.05$), and lastly, selling price imposed for affordable houses at $\beta = 0.002$, $t\text{-test} = 0.025$, $p > 0.05$).

From the findings, the highest attributes give impact to decrease or increase of affordable housing price had come through factors of financial approvals from financial institution and government regulation. As instance can be seen from positive attribution for loan margin. Government has approved up until 100% for financial institution to worked with those 1st homebuyers as mentioned in literature review. However, because of this positive reaction by homebuyers (demand) it might lead for housing developer for increasing the house prices seem purchasing power are increase. Yet, it vice versa with downpayment which provided negative reaction towards people or demand. Majority of people doesn't have any choice but must provide deposit for 10% which dissatisfied them for purchasing any affordable houses, this supposedly make a private developers reconsider their decision in providing high-end houses which might lead to decreasing in housing prices.

After data cleaning and determine the highest correlation attributes that suit with regression analysis, the analysis provided only nine attributes out of fifteen attributes that fit with the model fit with the model. The selected nine attributes are Credit History (B3), Downpayment (B8), loan Margin (B2), Financial Procedure (B7), Approval location for affordable houses in the neighbourhood (C2), Traffic condition (E3), Requirement and qualification for

affordable scheme (C3), Current Procedure to apply affordable houses (C4) and Housing design (G2). From table 5 below, the potential regression model was identified;

Table 5: Regression analysis of Housing demand with house prices

Regression Analysis between House Price and attributes of housing demand				
House Price	E3, B2, B7, C3, B3, G2, C4, C2, B8	R	Std. Error	Sig.
		0.672	43.56334	0.000
		R²	.431	
		F	21.072	

From the Table 5 above, regression analysis was performed to determine the relationship between house price and attributes from housing demand. The result revealed that the model collectively explains at 43 percent of the variance found in house price, with $R^2=0.431$, $F=21.072$, $p<0.05$. Based on ruled of thumbs of coefficient of determination (R^2) Cohen (2013) stipulated R^2 greater than 0.26 are considered as substantial. A closer aspect the variables that fit with the model of house prices provided with nine attributes.

Respectively, this would indicate about 43% of positive variation for house prices had explained this attributes. This result is consistent with previous research made by Saleh et al. 2024 and Majid et al. 2023. Their research consistently highlighted that financial and regulation attributes also part of significant impacts in housing demand. The researcher can summarized from the R^2 , the strength of new attributed of affordable housing demand is positively correlated and has a substantial relationship with the housing price in the sampled areas.

CONCLUSION

As conclusion, the findings indicate that financial approval factors and government regulations play the most significant roles in influencing housing prices for affordable housing. Financial elements such as credit history, down payment, and loan margin exhibit strong correlations with price variations, emphasizing the impact of buyers' financial capacity on market trends. Specifically, an increase in loan margin and financial procedures results in higher housing prices, while stricter credit history and down payment requirements tend to reduce affordability. Similarly, government regulations, including government approval locations, traffic conditions, and qualification requirements for affordable housing, predominantly show negative correlations with price, suggesting that regulatory measures can influence housing accessibility (Saleh et al., 2024; Gyourko & Molloy, 2015; Glaeser & Gyourko, 2018). Although, the final model above contributed to 43% impact towards housing demand aligning

with Al Shawabkeh et al. (2020), their study emphasized challenges in services provision and maintenance of affordable housing but did not examine regulation in local context.

Additionally, location attributes contribute to price determination in Klang Valley, but their influence is relatively less significant compared to financial and regulatory factors. However, previous studies have shown that locational attributes are significantly influenced by property buyers in north region (Mukthar et al., 2025). This indicates that locational attributes are largely dependent on characteristics of places and demographic profiles of buyers.

The findings suggest that policies aimed at improving access to affordable housing should focus on balancing financial accessibility with regulatory efficiency. By refining approval processes, optimizing financial loan structures, and ensuring strategic location planning, policymakers can help stabilize housing prices and enhance affordability for a broader segment of buyers (Quigley & Raphael, 2004; Hilber & Vermeulen, 2016). Finally, further study is required to investigate how sustainability factors may give impact to affordable housing prices for future direction of affordable housing market. This is important for affordable housing to move forwards with the existing policies and adopt the application of sustainable development practices like solar energy and Building Information Modelling (BIM).

ACKNOWLEDGEMENT

I sincerely thanks to all the authors who contributed to this research. Their dedication and expertise made it possible to carry out this research especially in distribution of 400 respondents. Alhamdulillah, with determination and cooperation, this research has been successfully accomplished.

REFERENCES

- Adzhar, S. A., Rahim, N. A., Basrah, N., Majid, R. A., & Mustafar, S. (2021). Overview on built environment planning: Residential overhang factors in Malaysia affordable housing. *IOP Conference Series: Earth and Environmental Science*, 881.
- Al Shawabkeh, R. K., Alzoubi, A. M., Rjoub, A., Alsmadi, M., AlKhamaiseh, M., Shboul, D., Smadi, A., Al-Bzour, A., Al-Omari, R., & Alobaidat, E. (2020). Evaluating the satisfaction rate for affordable housing in non-gated residential area (NGR): The case of Al-Sharq housing project in Zarqa-Jordan. *International Journal of Housing Markets and Analysis*, 14(1), 192–217.
- Batog, B., & Foryś, I. (2013). The analysis of the spatial stability of prices on the secondary housing market. *Folia Oeconomica*, 292, 77–88.
- Batóg, J., Foryś, I., Gaca, R., Głuszak, R. M., & Konowalczyk, J. (2019). Investigating the impact of airport noise and land use restrictions on house prices: Evidence from selected regional airports in Poland. *Sustainability*, 11(2), 412.

- Berawi, M. A., Darmawan, A., Gunawan, Miraj, P., & Rahman, H. D. (2020). Land value capture: Defining crucial variables difference-in-differences model for residential properties surrounding MRT Jakarta stage.
- Cambridge University Press. (2019). *Cambridge dictionary*. <https://dictionary.cambridge.org>
- Cheshire, P., & Sheppard, S. (2004). Endogenous changes in urban structure: Evidence from private housing supply. *Journal of Urban Economics*, 55(1), 130–154.
- Cheshire, P., & Sheppard, S. (2004). Introduction to the special issue: Urban problems and policies. *Journal of Economic Geography*, 4(1), 1–6.
- Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2013). *Applied multiple regression/correlation analysis for the behavioral sciences*. Routledge.
- Crespo, R., & Grêt-Regamey, A. (2013). Local hedonic house-price modelling for urban planners: Advantages of using local regression techniques. *Environment and Planning B: Planning and Design*, 40(4), 664–682.
- Dai, J., Lv, P., Ma, Z., Bi, J., & Wen, T. (2020). Environmental risk and housing price: An empirical study of Nanjing, China. *Journal of Cleaner Production*. <https://doi.org/10.1016/j.jclepro.2019.119828>
- Darendra, N. S., & Riyanto, E. (2025). Hedonic pricing model (HPM) on South Tangerang residential property value. *Planning Malaysia*, 23(1), 319–333.
- Dewan Bandaraya Kuala Lumpur. (n.d.). *Official total population in selected areas for Klang Valley*. Retrieved January 2023.
- Esmail Hadavandi, Arash Ghanbari, S. Mohsen Mirjani, & Salman Abbasian. (2011). Econometric panel data-based approach for housing price forecasting in Iran. *International Journal of Housing Markets and Analysis*, 4(1), 70–83.
- Glaeser, E. L., & Gyourko, J. (2003). The impact of building restrictions on housing affordability. *Economic Policy Review*, 9(2), 21–39.
- Glaeser, E. L., & Gyourko, J. (2018). The impact of building restrictions on housing affordability. FRB of Philadelphia Working Paper, 18-23.
- Green, R. K., Malpezzi, S., & Mayo, S. K. (2018). Metropolitan-specific estimates of the price elasticity of supply of housing, and their sources. *American Economic Review*, 95(2), 334–339.
- Gyourko, J., & Molloy, R. (2015). Regulation and housing supply. In *Handbook of regional and urban economics* (Vol. 5, pp. 1289–1337). Elsevier.
- Hair, J. F., Ringle, C. M., & Sarstedt, M. (2011). PLS-SEM: Indeed, a silver bullet. *Journal of Marketing Theory and Practice*, 19(2), 139–152.
- Hilber, C. A. L., & Vermeulen, W. (2016). The impact of supply constraints on house prices in cross-country analysis. *Journal of Housing Economics*, 32, 83–101.
- Julien, J. P., Stewart, S., III, Quirós, J. M., Cook, K., Muller, K., Noel, N., & Autor, S. (2025). *Investing in housing: Unlocking economic mobility for Black families and all Americans*. McKinsey Institute for Economic Mobility.
- Kauko, T. (2003). Residential property value and locational externalities. *Journal of Property Investment & Finance*.
- Krysik, J. L., & Finn, J. (2013). *Research for effective social work practice* (3rd ed.). Routledge.
- Lancaster, K. J. (1966). A new approach to consumer theory. *Journal of Political Economy*, 74(2), 132–157. <https://doi.org/10.1086/259131>

- Lee, A. K. L., Sinnakkannu, J., & Ramasamy, S. R. (2021). Housing bubble, affordability and credit risk to banks: A Malaysian perspective. *Journal of the Asia Pacific Economy*, 26(4), 619–652.
- Majid, R. A., Said, R., Rahim, N. A., Saleh, A. F., & Suryanto, T. (2023). Modelling housing demand factors for affordable units in Malaysia. *International Journal of Sustainable Construction Engineering and Technology*, 14(5), 267–277.
- Malpezzi, S. (1996). Housing prices, externalities, and regulation in U.S. metropolitan areas. *Journal of Housing Research*, 7(2), 209–241.
- Malpezzi, S., & Vandell, K. (2002). Does the low-income housing tax credit increase the supply of housing? *Journal of Housing Economics*, 11(4), 360–380.
- Mukhtar, S. N., Jamaludin, A. F., Abd Razak, M. H., Arminda, W., & Saleh, A. F. (2025). Investigating factors influencing residential location choice using PLS-SEM analysis: A case study in Seberang Perai, Penang, Malaysia. *Planning Malaysia*, 23(36).
- Pallant, J. (2005). *SPSS survival guide*. Open University Press.
- Quigley, J. M., & Raphael, S. (2004). Is housing unaffordable? Why isn't it more affordable? *Journal of Economic Perspectives*, 18(1), 191–214.
- Riyanto, E., et al. (2021). Identify factors influencing residential property value based on government appraisal perceptions. *Info Artha*, 5(1), 55–65.
- Riyanto, E., Prasetyo, K. A., & Wahyudi, E. (2023). Data-type adjustment for residential property valuation in Jakarta: An exploratory study. *Planning Malaysia*. <https://doi.org/10.21837/pm.v21i27.1281>
- Rosen, S. (1974). Hedonic prices and implicit markets: Product differentiation in pure competition. *Journal of Political Economy*, 82(1), 34–55.
- Saleh, A. F., A. M., Aini, R., Majid, M. H., Mustafa, & Jamaludin, A. F. (2022). Modelling housing mismatch for affordable housing demand and supply in Malaysia. *Journal of the Malaysian Institute of Planners*, 22(3), 335–351.
- Saleh, A. F., Majid, R., Ab. N., Rahim, & Omar, M. D. (2022). Housing supply model for affordable homes in Malaysia. *Environment–Behaviour Proceedings Journal*, 2(5).
- Saleh, A. F., Ting, K. H., Majid, R., & Masri, H. (2017). Attributes of housing mismatch framework in urban areas. *Environment–Behaviour Proceedings Journal*, 2(5).
- Saleh, F., Ting, K. H., & Majid, R. (2016). Housing mismatch model in suburban areas. *Procedia - Social and Behavioral Sciences*, 234, 442–451.
- Urban Institute. (2025). *The cost of affordable housing: Does it pencil out?* Urban Institute.

Received: 19th April 2025. Accepted: 25th August 2025