DEVELOPING A LITERATURE-BASED CONCEPTUAL FRAMEWORK FOR RESIDENTIAL PROPERTY OVERHANG IN MALAYSIA

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Abstract:

Residential property overhang has become a persistent concern in Malaysia, signalling a long-standing imbalance between what the market supplies and what households are truly able to afford. Despite various initiatives, such as the Home Ownership Campaign and affordable housing programmes, the issue continues to burden developers, financial institutions, and urban communities. This study seeks to make sense of this complex situation by developing a literature-based conceptual framework that brings together the main factors contributing to the overhang. A systematic review of studies, government reports, and market assessments published between 2000 and 2025 highlights four major drivers: market dynamics such as oversupply and pricing misalignment; socioeconomic pressures, including income stagnation and limited affordability; developer behaviour influenced by speculative and investment-driven projects; and governance gaps relating to fragmented planning and regulatory inconsistencies. These factors interact through mediating elements such as buyer preferences, market absorption patterns, and policy effectiveness, resulting in financial, social, and spatial consequences. The proposed framework integrates structural, behavioural, and policy-related dimensions, offering a clearer understanding of how the problem persists across different market segments. By consolidating these insights, the study provides a foundation for future empirical research and supports the development of more strategic, evidence-based interventions to promote a balanced, affordable, and sustainable housing market in Malaysia.

Introduction

Residential property overhang (RPO) in Malaysia has increased over the past two decades, reflecting a structural mismatch between effective supply and demand. The accumulation of overhang units ties up developer capital, increases credit risk, and undermines confidence in the housing market. It also exacerbates affordability challenges for low- and middle-income households and undermines inclusive and sustainable urban development (e.g., NAPIC, 2024; Ishak et al., 2024). Policy responses, particularly the Home Ownership Campaign (HOC) and various affordable housing schemes, have helped at the margins but have not changed the underlying trajectory, especially in the luxury segment which remains out of reach for most local buyers (Ramli et al.,2020; Hui,2024; Zulkarnain & Nawi,2024).

Previous studies have shown that various sources of property overhang interact with each other. At the market level, oversupply and price imbalances persist, particularly in serviced apartments and investor-oriented condominiums. Socioeconomic pressures, slower income growth relative to house prices, and uneven affordability constrain absorption. On the supply side, developer strategies often prioritize investment-driven products and pre-sales-driven pipelines, while at the institutional level, fragmented planning and fluctuating regulatory oversight weaken coordination across agencies and levels of government (Cheng & Ling, 2024; Ishak et., 2024; NAPIC, 2024).

More recent work adds perception-based frictions, including stigmas related to neighbourhood history, the environment, or events, which can delay sales even when basic price and quality conditions are met (Huri et.,2024; Ishak et.,2025). What is still missing is an integrated, literature-based framework that (i) unifies these drivers, (ii) defines the mechanisms through which they operate (shopper response, market absorption, policy effectiveness), and (iii) identifies the moderators, macroeconomic conditions, and urban planning contexts that shape persistence across locations and segments. Existing studies are informative but fragmented: most address single factors or report descriptive patterns without a unifying structure capable of guiding cumulative research and policy design (Ramli et al.,2020; Ishak et al.,2024; Cheng & Ling,2024; NAPIC,2024).

This paper addresses this gap by developing a literature-based conceptual framework that links market, socioeconomic, developer, and governance policy dimensions to the persistence of residential property overhang, which is based on Housing Market Theory and Urban Economic Theory (DiPasquale & Wheaton,1996; Mills,1967; O'Sullivan,2018). This study synthesizes

evidence from 2000-2025 (government reports, market analyses, and peer-reviewed studies) and translates it into a testable structure for future empirical validation. Its contributions are twofold: a coherent theory, a map of drivers, mechanisms, and moderators; and clear and policy-relevant points of influence for coordinated, capability-centered, and data-driven interventions (Hui, 2024; Zulkarnain & Nawi, 2024).

Systematic Literature Review

Overhanging residential properties have become a recurring issue in Malaysia's housing sector over the past two decades. Residential units that remain unabsorbed for an extended period are classified as residential property overhang (RPO), indicating a persistent mismatch between housing supply and effective demand. Beyond market inefficiencies, RPO also reflects deeper structural challenges arising from several interrelated factors, including developer behaviour, market dynamics, socioeconomic conditions, and governance frameworks (Cheng & Ling, 2024). The literature suggests that the complexity of these interactions necessitates a comprehensive examination to understand the underlying causes of RPO and its implications for social equity, financial stability, and sustainable urban development.

Market-Driven Factors

Market dynamics are a significant factor contributing to the residential property overhang (RPO) in Malaysia. Discrepancies in pricing, inaccurate demand forecasts, and surplus inventory, particularly within the luxury segment, continue to exacerbate the accumulation of overhang units. Developers frequently overestimate the demand for luxury properties, resulting in supply levels that surpass the market's actual absorption capacity (Ramli et al., 2020). This issue is particularly pronounced in major urban centers, where speculative investment and products targeting foreign buyers predominate, rendering serviced apartments and condominiums inaccessible to most local purchasers. National data corroborates this trend: residential property overhang increased from 4,400 completed units in 2000 to 27,746 in 2024, indicating a persistent disparity between supply and purchasing power (NAPIC, 2024). Evidence suggests that overhang units are concentrated in higher-priced and speculative markets, further exacerbating structural mismatches and constraining the supply of affordable housing (Ishak et al., 2024).

Socioeconomic Factors

Socioeconomic pressures exert a substantial influence on the pattern of residential property overhang. The limited financial capacity of M40 and B40 households constrains absorption, as income growth has not kept pace with rising property prices (Ishak et al., 2024). Consequently, demand remains highest for affordable units, while luxury and high-end properties continue to constitute a significant portion of the overhang stock. Developers often prioritize high-income and investor-driven segments due to higher profitability, neglecting the housing needs of the broader population (Cheng & Ling, 2024). Rapid urbanization exacerbates spatial inequality: affordable housing is relegated to peripheral areas, while central locations experience stagnation due to persistent RPO in luxury developments. For instance, Cheng & Ling (2024) emphasize that many developers overlook the needs of the broader population in favor of high-income and investor markets. This pattern restricts access to sustainable housing, exacerbates inequality, and reinforces spatial disparities, particularly as lower-priced options remain scarce in high-demand urban zones.

Developer Behaviour and Speculative Practices

Developer strategies, particularly those involving speculative investment and presale-oriented financing, significantly contribute to the residential property overhang. High-rise and serviced apartment projects are frequently designed to maximize investor returns rather than cater to end-users (Cheng & Ling, 2024). While presales are beneficial for securing early financing, they can inadvertently promote excessive production when demand signals are misinterpreted. This speculative construction destabilizes the market, resulting in cyclical price fluctuations and limiting access to affordable housing. The accumulation of overhang units in luxury segments has led to underoccupied or partially occupied neighbourhoods, often termed "ghost" neighbourhoods, which diminish the livability and appeal of the affected areas (Zulkarnain & Nawi, 2024).

Governance and Policy Factors

Governance gaps and policy incoherence further exacerbate the residential property overhang. Limited coordination among federal, state, and local authorities, coupled with inconsistent enforcement of planning and development guidelines, undermines policy effectiveness (Ramli et al., 2020; Ishak et al., 2024). Although initiatives such as the Home Ownership Campaign (HOC) and various affordable housing schemes have provided temporary relief, they fail to address the underlying structural issues related to affordability, accessibility, and equitable development. Inadequate oversight of presale practices and foreign ownership policies in luxury markets also intensifies speculative supply. These challenges underscore the necessity for an evidence-based, integrated policy framework that aligns development behaviour with Malaysia's social, economic, and urban planning objectives.

Theoretical Underpinnings

To comprehend the prevalence of residential property overhang (RPO) in Malaysia, it is essential to examine two principal theoretical frameworks: Housing Market Theory and Urban Economic Theory. Housing Market Theory elucidates the emergence of imbalances between effective supply and demand when development decisions are misaligned with market fundamentals. DiPasquale and Wheaton (1996) underscore that price signals, expectations, and supply-demand cycles are pivotal in determining whether housing stock is absorbed or contributes to the overhang. RPO arises when newly completed units enter the market at prices exceeding buyers' purchasing capacity, or when speculative supply is introduced more rapidly than genuine demand. These imbalances affect sales velocity, price adjustments, and the accumulation of overhang units.

Urban Economic Theory broadens this perspective by associating residential property overhang with spatial, demographic, and socioeconomic dynamics. Classical urban economists such as Mills (1967) and O'Sullivan (2018) emphasize how income distribution, population growth, migration patterns, and urbanization influence housing accessibility and location. In rapidly expanding urban areas, speculative development frequently targets investor-driven demand rather than local household needs, leading to clusters of RPO. Constraints such as zoning regulations, infrastructure provision, and land availability further contribute to the geographic concentration and persistence of overhang units.

Building on these theoretical perspectives, Malaysian studies have also highlighted the influence of perceptual and behavioural factors. Huri et al. (2024) demonstrate that property stigma, such as neighbourhood concerns, environmental issues, or event-related perceptions, can significantly reduce marketability even when physical conditions and pricing are acceptable. Ishak et al. (2025) similarly find that psychological, non-physical, and physical stigma contribute to buyer hesitation, particularly in dense urban environments, thereby reinforcing RPO. Hui (2024) adds that declining affordability remains the strongest predictor of residential property overhang nationwide, with mid and high-priced units consistently dominating the overhang stock. Importantly, Hui notes that RPO often persists over time: developments with previous overhang units are more likely to experience continued absorption challenges, even when site characteristics improve.

Taken together, these theoretical and empirical insights suggest that residential property overhang in Malaysia arises from the interaction of structural forces (supply-demand mismatches and affordability constraints), behavioural factors (developer decisions and property-related stigma), and institutional elements (planning, governance, and regulatory oversight). Integrating these perspectives provides a robust foundation for developing a conceptual framework that captures how market dynamics, socioeconomic realities, and policy interventions collectively shape the persistence of RPO.

Research Gaps

Although research on residential property overhang (RPO) in Malaysia has grown in recent years, several important gaps remain unaddressed. A review of existing studies shows that much of the literature provides descriptive accounts of RPO patterns without fully examining the causal mechanisms linking market forces, governance structures, developer behaviour, and socioeconomic constraints (Ramli et al., 2020; Ishak et al., 2024). This limits the field's ability to explain why RPO persists across different market segments and geographic locations.

A second gap concerns mediating mechanisms. Although prior studies acknowledge the influence of buyer behaviour, market absorption, and developer responses, these elements have seldom been theorised or modelled explicitly (Cheng & Ling, 2024; Ishak et al., 2024). As a result, the pathways through which structural drivers translate into RPO have yet to be adequately examined in the Malaysian context.

Third, existing research pays limited attention to moderating factors, such as macroeconomic conditions, spatial planning, and policy interventions. These contextual variables are likely to shape variation in the severity and persistence of RPO, yet they are often omitted from analytical frameworks (Zulkarnain & Nawi, 2024; NAPIC, 2024). This omission restricts meaningful comparisons of RPO patterns across regions and housing categories.

Finally, despite the growing body of published work, there remains no comprehensive conceptual framework that systematically links causes, mechanisms, outcomes, and policy implications. While existing studies highlight individual drivers, such as speculative development, affordability pressures, or rapid urbanisation, they do not integrate these elements into a unified theoretical model (Cheng & Ling, 2024; Ramli et al., 2020). This gap limits theoretical advancement and constrains the development of coordinated evidence-based interventions for policymakers, developers, and planning authorities.

These shortcomings highlight the need for an integrated, literature-based analytical framework. The summary table below illustrates how existing research remains fragmented and reinforces the importance of establishing a coherent structure for analysing residential property overhang in Malaysia:

Table 1: Summary Table of Key Findings and Gaps

Study	Main Findings	Research Gaps
Ramli et al.,2020	High-end unit oversupply: speculative development is the main culprit	Insufficient incorporation of government and socioeconomic elements
Zulkarnain & Nawi (2024)	The overhang is fueled by permissive lending and rapid urbanization.	Urban centers are the focus; a national perspective is absent.
Ishak et al., 2024	Housing absorption is limited by affordability concerns.	Insufficient research on the efficacy of policies and consumer behavior
Cheng & Ling (2024)	Pre-sale tactics and speculative investment increase overhang.	Absence of a conceptual framework that unifies causes, mediators, and results
NAPIC (2024)	Overhang apartments increased sixfold between 2000 and 2024.	Descriptive simply; reasons and consequences are not explained.

Proposed Conceptual Framework

The proposed conceptual framework integrates theory, previous research, and study objectives by offering an organized depiction of the key variables, constructs, and relationships that contribute to residential property overhang (RPO) in Malaysia. This framework is crafted by synthesizing concepts from literature on residential property overhang, housing market dynamics, and pertinent socioeconomic factors. The primary constructs encompass market dynamics (such as supply-demand imbalances, price fluctuations, and inventory levels), socioeconomic factors (including household income, demographic trends, urbanization, and population growth), developer behaviour (such as land acquisition decisions, project management practices, and development timelines), and the policy and regulatory environment (including zoning regulations, incentives, taxes, and government housing policies).

Previous studies consistently highlight the importance of these constructs in influencing residential property overhang. Once these constructs are identified, the next step is to understand their interrelationships. For instance, RPO may be directly affected by market dynamics and socioeconomic pressures, while developer behaviour might serve as a mediator, translating market signals into actual supply decisions. Similarly, the impact of supply-demand imbalances on RPO can be either amplified or diminished by the policy and regulatory environment, depending on factors such as enforcement, planning coordination, and regulatory consistency. These constructs can be assessed through indicators like the number of RPO units, average property prices, median household income, project completion timelines, and policy implementation outcomes, facilitating future empirical testing. In conclusion, as the following graphic shows, a literature-based conceptual framework serves as a roadmap for research

design, directing data collection, hypothesis testing, and analysis by establishing logical connections between empirical data and theoretical understanding:
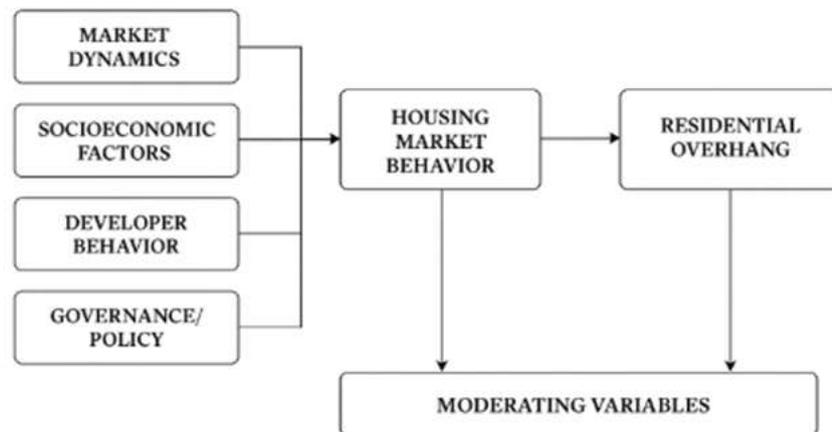

Figure 1: Literature-Based Conceptual Framework for Residential Property Overhang

To illustrate these relationships, the conceptual framework positions the independent variables on the left, the mediating mechanisms in the center, with the dependent variable, residential property overhang, on the right, and the moderating variables either above or between the arrows. Housing Market Theory elucidates how market signals and pricing mismatches lead to RPO, while Urban Economic Theory explains how demographic and spatial factors affect housing outcomes. Policy impact perspectives further underscore the role of governance in shaping market responses. Together, these theoretical foundations reinforce the conceptual logic of the framework.

As depicted in Figure 1, this literature-based conceptual framework serves as a roadmap for research design by establishing clear connections between structural drivers, mediating processes, and contextual conditions. It provides a coherent basis for hypothesis development and empirical validation, offering practical insights for policymakers aiming to address Malaysia's persistent residential property overhang.

Population and Sampling

Developers, housing policymakers, real estate investors, professionals in the property industry, and end users (investors and buyers) throughout Malaysia make up the study's target population. These organizations were chosen because they provide important viewpoints on overhang concerns and are directly involved in or impacted by the supply, demand, pricing, and regulatory frameworks of residential real estate. To make sure that only respondents with pertinent expertise or experience in residential property development are included, the study will use purposive sampling, a non-probability sampling technique. In specialized fields where knowledge is crucial for data authenticity, this methodology works well for exploratory and applied research (Etikan et al., 2025). To produce accurate and contextually relevant data, purposeful sampling makes sure that participants have a proper awareness of pricing strategies, market trends, policy execution, and buyer behaviour. To facilitate comparisons between regions and demographic groupings, stratification will also be used to guarantee representation across stakeholder categories (developers, policymakers, investors, and end users) and geographic locations (urban vs. suburban areas). By focusing on the demographic groups most

relevant to residential property overhang dynamics, the review improves the generalisability of the analysis.

Sample Size

The ten-fold rule, which states that the minimum sample size should be ten times the largest number of structural paths leading to any latent variable, will be used to determine the required sample size for PLS SEM analysis (Hair & Alamer, 2022). Based on this guideline, a minimum of 384 respondents is considered sufficient to ensure adequate statistical power and stable path coefficient estimates, given the complexity of the proposed model involving multiple independent, mediating, and moderating variables. To account for incomplete surveys and non-responses, an additional 20% oversampling will be implemented to reduce the risk of sample loss.

To capture variation in residential property overhang (RPO) patterns, buyer preferences, and market behaviour, the study draws on a diverse sample that includes respondents from both suburban/peripheral areas and high-density urban locations such as Kuala Lumpur, Penang, and Selangor. By incorporating perspectives from demographic groups most closely linked to RPO dynamics, the review strengthens the generalisability of the analysis. This diversity not only ensures that key variations across different housing markets are captured but also enhances the relevance of the analytical insights for policy and practical applications.

Sampling Technique

The gathered data will be analysed, and the suggested conceptual framework will be tested, using partial least squares structural equation modelling, or PLS-SEM. For this investigation, PLS-SEM is very appropriate for several reasons:

1. This framework consists of several independent variables, mediators, moderators, and dependent outcomes, making it difficult to handle. Simultaneous estimation of measurement models (construct validity and reliability) and structural relationships (path analysis) is made possible by PLS-SEM.
2. Small to Medium Sample Flexibility: PLS-SEM is excellent given the practical constraints in reaching specific stakeholders in the housing market because, unlike covariance-based SEM, it is robust to smaller or non-normally distributed data sets (Henseler et al., 2025).
3. Prediction Orientation: PLS-SEM places a strong emphasis on explaining variance and predicting dependent constructs, which is consistent with the study's goal of determining the root causes of residential property overhang and understanding how mediators and moderators influence outcomes.
4. Evaluation of Mediating and Moderating Effects: PLS-SEM enables the testing of moderating factors (macroeconomic conditions, policy interventions, and urban planning) and mediating mechanisms (housing market behaviour, buyer response), offering a nuanced understanding of how these factors impact overhang across contexts.

The methodology consists of two steps: (1) evaluating the measurement model for validity (convergent and discriminant validity, Cronbach's alpha, composite reliability) and reliability (path coefficients); (2) evaluating the structural model through bootstrapping (5,000 resamples) for significance testing; and (3) determining R^2 values to interpret explained variance. This

thorough approach ensures the conceptual framework's rigorous empirical validation while providing developers, decision-makers, and end users with practical insights.

Measurement

The constructs in this study are operationalised using a structured measurement approach grounded in established literature to ensure both theoretical validity and empirical relevance. The independent variables, market dynamics, socioeconomic factors, developer behaviour, and governance/policy effectiveness, are measured using multi-item scales that capture critical dimensions such as oversupply, pricing mismatches, income constraints, speculative development practices, and regulatory gaps (Ramli et al., 2020; Cheng & Ling, 2024; Ishak et al., 2024).

To measure the mediating constructs, including buyer response, policy effectiveness, and housing market behaviour, indicators such as transaction volumes, absorption rates, buyer preferences, and perceived effectiveness of government interventions are employed (NAPIC, 2024). These mediators help explain how structural drivers translate into residential property overhang (RPO).

The dependent variable, residential property overhang (RPO), captures financial, spatial, and social implications associated with overhang units. This includes inequitable housing availability, inefficient land use, and developer capital lock-up, which together reflect the multidimensional nature of RPO (Zulkarnain & Nawi, 2024).

All items are assessed using a five-point Likert scale (1 = strongly disagree to 5 = strongly agree), enabling respondents to express the extent to which each statement reflects their views or experiences. The accompanying measurement table organises each construct, dimension, and item systematically, ensuring clarity and consistency.

This structured operationalisation strengthens the rigor of the study's measurement model and supports robust structural equation modelling (PLS SEM). By clearly defining and aligning the constructs with measurable indicators, the study enhances the reliability and validity of the relationships proposed within the conceptual framework.The items developed are as follows:

Table 2: Measurement Table

Construct	Dimension	Items	Source
Market Dynamics	Pricing & Oversupply	MD1: The supply of housing outpaces the demand; MD2: Prices are out of line with what buyers can pay; MD3: Oversupply is caused by speculative investment	Ramli et al.,2020; Zulkarnain & Nawi, 2024
Socioeconomic Factors	Income & Affordability	SEF1: Purchase power is restricted by household income; SEF2: Increasing real estate costs make purchases less affordable; SEF3: Demand pressure rises with urbanization	Ishak et al., 2024

Construct	Dimension	Items	Source
Developer Behaviour	Speculative Activities	DB1: Overproduction is influenced by pre-sale tactics; DB2: Prioritize upscale apartments over reasonably priced ones; DB3: The market is dominated by investment-driven projects.	Cheng & Ling, 2024
Governance & Policy	Regulatory Efficiency	GP1: There is fragmentation in planning policies; GP2: Guidelines are not adequately enforced; GP3: Reactive policy initiatives	Ramli et al.,2020
Housing Market Behaviour (Mediator)	Transaction & Absorption	HMB1: Units remain in overhang for a long time.; HMB2: Low amounts of transactions; HMB3: Slow changes in market prices	NAPIC, 2024
Buyer Response (Mediator)	Demand & Preference	BR1: Less costly flats are preferred by buyers; BR2: Investors dominate the luxury market; BR3: Few end-user sales are made.	Ishak et al., 2024
Policy Effectiveness (Mediator)	Programmes & Incentives	PE1: HOC briefly lowers overhang; PE2: Developer choices are influenced by policy incentives; PE3: Residential property overhang (RPO) is not effectively monitored.	Ramli et al.,2020
Residential Overhang (Dependent)	Economic, Social, and Geographic	RO1: Developers' capital lock-in; RO3: Inefficient land use and ghost neighbourhoods; RO2: Social imbalance in housing access	Zulkarnain & Nawi, 2024; Cheng & Ling ,2024

Data Collection

To ensure accessibility and increase response rates, a standardized questionnaire will be used to collect data, and it will be distributed online and face-to-face. To ensure validity, reliability, and clarity, 20-30 members of the target demographic will pre-test the survey instrument. All participants will provide their informed consent, and the university research ethics committee will be consulted for ethical approval. Data confidentiality and respondent confidentiality will be strictly maintained.

Data Analysis

PLS-SEM (SmartPLS 4) will be used to analyse the collected data to evaluate both the measurement and structural models. Reliability will be assessed using Cronbach's alpha and composite reliability, while convergent validity (AVE) and discriminant validity (HTMT ratio and Fornell–Larcker criterion) will be examined to confirm construct validity (Hair & Alamer, 2022). Bootstrapping with 5,000 resamples will be applied to estimate path coefficients and their significance levels. To understand how contextual conditions shape the relationships within the model, the analysis will also examine the moderating effects of macroeconomic

conditions, policy interventions, and urban-planning variables on residential property overhang (RPO). The analysis is expected to strengthen the conceptual framework by providing empirical support for the proposed relationships and by generating insights that may inform policymakers, developers, and other stakeholders in addressing RPO in Malaysia.

Conclusion

In conclusion, the proposed conceptual framework provides a structured and theoretically informed lens for understanding residential property overhang in Malaysia. By integrating insights from Housing Market Theory and Urban Economic Theory, this framework explains how market dynamics, socioeconomic pressures, developer decisions, and governance structures interact to shape overhang outcomes. This integration strengthens the theoretical foundation for future research by organizing these elements into a coherent set of drivers, mechanisms, and contextual conditions.

Beyond its theoretical contributions, this framework also offers practical value for policy and planning. By identifying where the mismatch between supply and demand begins, and how buyer response, market absorption, and policy effectiveness mediate this relationship, this model highlights critical points of influence for intervention. This includes improving the alignment of capabilities, strengthening development governance, and ensuring better coordination across planning authorities. Therefore, this framework not only guides future empirical testing but also supports more targeted and evidence-based policy responses aimed at reducing persistent of overhang housing and promoting a healthier and more sustainable housing market in Malaysia.

| **Author Contribution Statement:** | All authors contributed significantly to the development of this manuscript. [Prof. Madya Dr. Zaherawati Zakaria] contributed to the conceptualisation of the study, development of the theoretical framework, and provided overall supervision, critical guidance, and academic oversight throughout the research process.
[Siti Farah Mohamed Yusoff Tajudin] was responsible for the systematic literature review, drafting of the manuscript, data organisation, and refinement of the analytical components. She also contributed to revisions and the finalisation of the paper. |

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