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EVALUATING MARKET ATTRIBUTES AND HOUSING AFFORDABILITY: GAINING PERSPECTIVE ON FUTURE VALUE TRENDS

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ABSTRACT

This study fills a significant research gap in Malaysian government-led homeownership and affordability. Centered on crucial market attributes influencing these initiatives, insights from low-income groups were obtained. The primary aim of this study was to assess the importance of various market attributes on government homeownership initiatives in Malaysia. The data were collected from low-income groups using a structured questionnaire, providing valuable insights into the unique challenges faced by this demographic. A Relative Importance Index (RII) was employed to analyze the data, revealing that Financial Market Factors, Household Financial Capacity, Housing Affordability and Accessibility, and Government Housing Policies were the market attributes of the highest importance in shaping government homeownership efforts. The results of the exploratory factor analysis demonstrated that the Financial Market Factor was the most influential component, as indicated by its mean rank. This study sought to incorporate the valuable perspectives of respondents regarding integrating future value into financing models. Respondents' opinions reflected a significant level of support for such innovative approaches. This study examines the crucial market attributes influencing government homeownership initiatives in Malaysia. The findings underline the potential of incorporating future value into financing models to enhance housing affordability for low-income groups and promote broader homeownership objectives.

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1. Introduction

The cherished dream of homeownership in Malaysia faces increasingly daunting challenges due to the mounting housing affordability crisis, exacerbated by factors like surging property prices and demanding down payment requirements. Despite persistent government efforts, these challenges endure, necessitating a thorough investigation into the pivotal market attributes that significantly influence government-led homeownership initiatives (Mohamad Jais, 2022). Addressing this research gap calls for comprehensive studies on market attributes impacting government homeownership efforts, especially within Malaysia's unique socio-economic and policy context.

While existing literature often explores housing affordability and government interventions (Cheah et al., 2017), limited research systematically dissects and prioritizes specific market attributes like housing prices, property value, real estate market conditions, and interest rates. This deeper analysis is crucial for understanding their relative importance in either facilitating or hindering homeownership in the context of government initiatives, providing policymakers with a more precise roadmap for effective intervention.

This study has a dual objective: first, to unearth the fundamental market attributes that exert a significant influence over government-led homeownership initiatives in Malaysia, and second, to address a significant research gap by honing in on those market factors that are specifically pertinent to the local context. In this pursuit, the study considers Malaysia's distinctive dynamics, policy framework, and socio-economic landscape, ensuring a nuanced understanding of the challenges and opportunities within the country's homeownership landscape. This research sheds light on the multifaceted ways various market attributes impact government initiatives to foster homeownership.

To realize these objectives, the study actively involves the invaluable perspectives of lower-income families, enriching the research with their insights. Their input regarding integrating future value into the financing model is particularly crucial, as it ensures that the proposed model resonates with the needs and aspirations of the community, especially those grappling with housing affordability challenges. The overarching ambition of this research is to bring about substantial change in the realm of affordable housing in Malaysia. Thus, the study seeks to analyze essential market factors and propose an alternative financing approach rooted in the concept of future value while simultaneously considering people's viewpoints. In doing so, the ultimate goal is to enhance the accessibility and sustainability of homeownership for all Malaysians**.**

This paper is structured to provide a deeper understanding of the market attributes influencing government homeownership initiatives. It commences with a comprehensive review of relevant literature concerning homeownership, housing affordability, and the market factors that shape government efforts in addressing homeownership issues. The paper also explores the literature on integrating future value concepts into financing models. Subsequently, it discusses the market attributes and methodologies to assess their impact. Finally, the paper concludes by presenting an analysis of the findings and engaging in a thorough discussion on the conclusions drawn from the study.

2. Literature review

Housing affordability constitutes a pressing global concern, especially in swiftly expanding urban centers grappling with burgeoning populations. This literature review delves deeply into the intricate realm of housing affordability and its complex interplay with diverse market elements. Its primary objective is to evaluate these market factors and underscore the significance of emerging future value trends as a prospective remedy for housing affordability challenges. Many factors influence the housing market, and comprehending their dynamics is crucial in shaping efficacious policies and financial models (Said et al., 2014).

2.1. Government Initiatives in Malaysian Homeownership

Malaysia's housing regime reflects a strong governmental influence aimed at achieving a home-owning society. The housing policies in Malaysia encompass both comprehensive and residual aspects, utilizing interventions such as the National Housing Policy (NHP) to guide planning and development (Siti Hajar, 2011; Agus et al., 2002). The government implements policy formulation and strategies to address housing issues, particularly for lower-income groups. The housing regime is characterized by market-driven and state-led initiatives, positioning Malaysia within a liberal and corporatist framework (Doling, 1999).

At the development stage, the state plays a pivotal role in determining housing locations for low-income groups, collaborating closely with private developers for housing development. Quotas, such as the Bumiputra quota, are imposed to ensure housing allocation for low-cost housing (Ministry of Urban Wellbeing, Housing, Local Government (MUWHLG), 2013). The government's involvement extends to the construction stage, where state corporations contribute to public housing and state housing agencies participate in constructing affordable houses for low and middle-income groups (Sulaiman et al., 2016). However, the overall trend leans toward a liberal housing policy, with significant reliance on the private sector for housing stock (Yaacob et al., 2022).

The consumption stage in Malaysia emphasizes individual affordability, contributing to the

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commodification of housing. While the government provides guidelines, like the Bumiputra quota policy, there is a need for greater consistency in housing distribution practices (Yaacob et al., 2022). This inconsistency results in variations in housing standards, mirroring differences in income and affordability. The housing market focused on homeownership tends to favor high-income individuals, raising concerns about accessibility for low-income groups (Anis et al., 2021).

The study by Yaacob et al. (2022) concludes that, while Malaysia's housing policies respond to citizens' needs, more needs to be done in terms of providing housing opportunities, particularly for young people. Malaysia's housing policies need to be revised due to the lack of coordination among housing agencies, the absence of a comprehensive rental system, and the issue of unaffordable housing in the private market (Yaacob et al., 2022). The authors propose establishing a robust rental system, drawing insights from the well-structured systems in the United Kingdom and Australia to enhance accessibility to affordable and decent housing.

The findings from Samad et al. (2017) highlight the focus on low-cost housing in Malaysia's housing policies. Supply-oriented initiatives are deemed urgent, emphasizing cost-effective housing development measures (Ubale & Martin, 2012; Cheah et al., 2017; DOSM, 2020). Samad et al. (2017) underscore the importance of harmonizing both supply and demand-side factors for a balanced equilibrium and enhanced affordability.

The Khazanah Research Institute (KRI) report (April 2023) sheds light on the challenges within the People's Housing Programme (PPR), stressing the need for a policy framework to manage social housing. The report recommends transitioning from social renting to private rentals and eventual homeownership. The initiatives led by Khazanah aim to address shortcomings, improve livability, and enhance community well-being in PPR communities.

Dato' Seri Najib Abd Razak's amendment to the 10th Malaysian Plan in 2019 reflects ongoing efforts to improve affordable housing, focusing on the middle-income group (Abidin, 2019). PR1MA Corporation Malaysia is vital in providing affordable housing in key urban centers, balancing affordability and quality. The overview incorporating insights from Yaacob et al. (2022), Samad et al. (2017), and the KRI report, demonstrates the government's initiatives, their effects, and the research basis, contributing to a more nuanced understanding of Malaysia's evolving housing landscape.

2.2. Market Attributes Influencing Government's Homeownership Efforts

Exploring market attributes influencing government-led homeownership initiatives reveals crucial factors highlighted in the existing literature. Housing prices, a key driver of affordability challenges, shape government initiatives (Abdul Muhaimin & Shadiya, 2010), emphasizing the need for adaptable programs considering market dynamics (Anis et al., 2021). Influenced by market trends, residential property valuation underscores the necessity of government initiatives considering property value in the context of affordability (Ameira et al., 2018).

Real estate dynamics, including supply and demand imbalances and housing project affordability, significantly impact government efforts (Cheah et al., 2017). Initiatives must align with market stability, especially in high-demand, limited-supply markets (Nurshuhada et al., 2017). Moreover, incorporating maintenance, utilities and taxes - essential components in assessing affordability - into government initiatives is crucial (Mariana et al., 2020).

Interest rates, essential to housing affordability, necessitate government strategies aligned with prevailing economic conditions (Najihah & Bujang, 2021). Consideration of interest rate trends is imperative for flexible government programs (Fadahunsi et al., 2020). Stable house prices instill confidence in affordability, requiring government initiatives that promote market stability (Ayberk & Onder, 2022). Inflation rates, impacting purchasing power, must be considered in government programs to address inflationary pressures on housing costs (Zyed, 2014; Anis et al., 2021).

Household incomes, fundamental to affordability, highlight the need for government initiatives catering to diverse income levels (DOSM, 2020). Targeted affordability measures are crucial due to income disparities among prospective homebuyers (Cheah et al., 2017). Non-housing financial obligations, including loan repayments, should be considered in government-led affordability programs (BNM, 2020).

Income growth relative to housing costs is vital for long-term affordability (DOSM, 2020), requiring government alignment with broader economic factors like GDP growth rates (Mohamad Jais, 2022). Financial commitments, such as loans and debts, impact affordability, necessitating government programs to

accommodate for existing financial obligations (DOSM, 2020; BNM, 2020).

The rent-to-income ratio is crucial for renters, emphasizing the need for government initiatives to address specific challenges in the rental market (Mohammad Mujaheed et al., 2021). Shifts in housing demand underscore the importance of government interventions responsive to changing market dynamics (Cheah et al., 2017; Khazanah Research Institute, 2021).

Affordable housing stock, shaped by government strategies like PR1MA, directly influences market affordability (Abdul Muhaimin & Shadiya, 2010; Najihah & Bujang, 2021). Initiatives significantly contribute to affordability but warrant critical examination of gaps and challenges in literature to understand how these attributes influence housing affordability.

Existing literature may need to address interactions between market attributes and government-led homeownership initiatives comprehensively. Future research should bridge these gaps for a holistic understanding of how specific market attributes impact the success and challenges of government affordability measures. Understanding the changing economic landscapes is crucial for policymakers to refine existing programs effectively and develop targeted initiatives addressing housing affordability challenges across diverse contexts.

2.3. Importance of Future Value Trends in Housing Affordability

Incorporating the concept of future value is an innovative and promising approach to addressing the intricate challenges of housing affordability (Nor Hamizah et al., 2020). This forward-thinking perspective equips stakeholders with decision-making tools, provides valuable insights into market dynamics, and guides pricing strategies. The relevance of this approach extends to fundamental principles in Islamic finance (Mawarliza, 2009) and exhibits parallels with the reverse mortgage model (Mohammed & Noralfishah, 2017). Said (2019) underscores that integrating future value trends into housing finance models can reshape the housing market significantly, potentially enhancing affordability, particularly for low-income groups.

Despite its promise, this innovative approach faces challenges. Predicting future property values involves uncertainties linked to economic conditions, market trends, and external factors. The accuracy of predictions relies on reliable data and the ability to anticipate changes in the real estate market accurately (Petropoulos et al., 2022). Developing models that accurately incorporate future value trends requires sophisticated mathematical and statistical techniques to account for dynamic factors influencing the real estate market (Liu, 2022).

However, the innovative aspect of integrating future value concepts, as highlighted by Said (2019), underscores its potential as an alternative for bolstering housing affordability. The inherent compatibility of future value with broader objectives, such as sustainable and inclusive housing solutions, establishes it as a strategic tool to address the evolving needs of society (Nor Hamizah et al., 2020). Integrating future value into financing models aligns with broader socioeconomic goals, ensuring long-lasting affordability and fostering stable, accessible, and sustainable housing opportunities for diverse communities (Ladd, 1962).

Moreover, incorporating future value stands out for its forward-looking nature. Traditional assessments of housing affordability often concentrate on existing market conditions, neglecting the dynamic nature of real estate (Crowe et al., 2013). Considering future value introduces a proactive element, recognizing that market trends and property values evolve. This innovative perspective enables more strategic and anticipatory policymaking, aligning with the dynamic nature of housing markets and offering a nuanced understanding that surpasses conventional affordability models (Nor Hamizah et al., 2020; Shi et al., 2021). Addressing these challenges and recognizing this alignment is crucial for successfully integrating this forward-looking perspective into mainstream housing affordability practices. The literature supporting the incorporation of future value emphasizes its potentially transformative impact on housing affordability, whereas challenges are acknowledged in predictive accuracy, model complexity and stakeholder resistance (Nor Hamizah et al., 2020).

2.4. Relationship Between Market Attributes and Future Value Trends

Existing literature highlights the nuanced relationship between market attributes and future value trends in housing (Abdul Muhaimin & Shadiya, 2010; Nor Hamizah et al., 2020). Housing prices, a pivotal market attribute, significantly impact future value trends, creating challenges or opportunities for long-term

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affordability (Ameira et al., 2018; Ciarlone, 2015). The valuation of residential properties, influenced by market trends and property-specific characteristics, further emphasizes the connection between these attributes and future values (Ameira et al., 2018).

The overall dynamics of the real estate market, including supply and demand imbalances, housing project affordability levels, and market stability, play a central role in shaping future value trends (Cheah et al., 2017; Liu & Ong, 2021; Said et al., 2017). A stable housing market is associated with more predictable and favorable future value trends, contributing to enhanced affordability perceptions (Ayberk & Onder, 2022).

Ongoing housing expenses, such as maintenance, utilities, property taxes and insurance, constitute a critical market attribute impacting future value trends (Mariana et al., 2020). These recurring costs influence homeownership's financial feasibility, thus affecting housing's long-term value and affordability (Mohammad Mujaheed et al., 2021). As Najihah and Bujang (2021) highlighted, the prevailing interest rate is a crucial determinant of future housing value trends, influencing borrowing costs and subsequent affordability.

The stability of house prices over time is pivotal in shaping perceptions of future value trends, instilling confidence in the predictability and sustainability of future housing values (Mohd Shoed & Subramaniam, 2015; Suleiman et al., 2023). Inflation rates, representing the pace of price increases for goods and services, also influence future housing value trends, with persistent inflation potentially impacting affordability (San Ong, 2013).

Household incomes, a fundamental market attribute, are intricately linked to future housing value trends (DOSM, 2020). Disparities in income levels among prospective homebuyers contribute to varying degrees of future affordability (Cheah et al., 2017). Non-housing financial obligations, including loan repayments and everyday living expenses, further shape the relationship between market attributes and future housing values (Ismail et al., 2015).

The rate at which incomes increase relative to housing costs is vital for determining long-term affordability and future housing value trends (DOSM, 2020). Broader economic factors, including GDP growth rates and employment levels, significantly impact future housing value trends (San Ong, 2013), with a robust economy associated with favorable trends.

Shifts in housing demand, influenced by market attributes, substantially impact future housing value trends (Cheah et al., 2017). Increased demand can drive prices higher, affecting future housing values and potentially challenging affordability (Nurshuhada et al., 2017). The affordability of particular housing projects, shaped by market attributes, directly determines the accessibility of future homeownership opportunities (Nurshuhada et al., 2017).

Affordable housing stock, often influenced by government initiatives, is crucial in shaping future housing value trends (Muhammad Jais, 2022). Limited affordable housing options can exacerbate challenges in future affordability, particularly for lower-income segments (Anis et al., 2021). While this analysis establishes the intricate relationship between market attributes and future value trends, further research is needed to understand this correlation comprehensively, contributing to effective policy measures and strategies to address future affordability challenges.

2.5. Integrating Future Value into Financing Models

Integrating the future value concept into housing financing models represents a pivotal shift in shaping innovative solutions for addressing housing affordability challenges. As McDermott (2017) and Shi et al. (2021) underscored, the future value model holds promise for diverse stakeholders, including investors, homebuyers and builders. The model, anchored in comprehensive market data analysis (Mohamad Shukry et al., 2012; Monika et al., 2021), empowers stakeholders to make well-informed decisions regarding house pricing strategies (Shi et al., 2021). While proponents envision transformative impacts, challenges exist concerning the practicality of overhauling real estate pricing dynamics (Monika et al., 2021). The alignment of effective government policies with this financing model warrants scrutiny, particularly given the complexities in the housing sector regarding homeownership and affordability.

In the context of Islamic finance, Mawarliza's (2009) research on house prices highlights the reliance on future value, aligned with principles prohibiting Usury (Riba) and uncertainty (Gharar). This adherence introduces unique challenges within the financial landscape, questioning the alignment of Islamic banking practices with distinct Islamic finance principles (Uddin, 2015). Integrating future value concepts into Islamic finance practices, particularly

within models like Musharakah Mutanaqisah, requires a critical assessment of its effectiveness in enhancing housing affordability for low-income groups.

Parallels drawn with reverse mortgage concepts, designed for senior citizens to access untapped home equity without relinquishing ownership, underscore the need to critically examine potential drawbacks and challenges (Mohammed & Noralfishah, 2017). Research on reverse mortgages, such as Boehm & Ehrhardt (1992) and Shiller & Weiss (2000), provides insights into the risks associated with these long-term financial products. Integrating the future value concept into financing models necessitates a similar comprehensive evaluation of risks and potential drawbacks, considering its implications for homeowners and the broader housing market (Ameira et al., 2018).

Despite the challenges, the proposed model seeks to amalgamate key variables from reverse mortgages and Islamic finance into an innovative financial approach tailored to Malaysia's economic conditions. This approach, striving for equilibrium between reduced monthly payments and sustainable debt levels, introduces the concept of future value to stimulate homeownership without unduly burdening households (Mohamad Jais, 2022). The practical implementation of this approach demands vigilant scrutiny, considering the intricate dynamics of the housing finance landscape and its unique challenges.

A more refined process is required to develop the proposed model for integrating future value into financing models. The envisioned model aims to offset the given loan by strategically incorporating the expected future value. For instance, consider the financing of an RM300,000 ($64,690.05) home. Instead of a conventional full loan of RM300,000 (USD 64,690.05), the model suggests reducing the loan to RM150,000 (USD 32,345.02) (50% of the total loan). The remaining RM150,000 (USD 32,345.02) is intended to be offset by the expected future value, projected after half of the mortgage period. However, further research is needed to refine the model and ensure its practicality, effectiveness, and alignment with the broader objectives of affordability and sustainable homeownership.

3. Methodology

A questionnaire survey approach was adopted to thoroughly investigate the market attributes shaping government-led homeownership initiatives. The study concentrated mainly on the lower-income segment in Malaysia, targeting the B40 demographic. A carefully designed structured questionnaire was the primary data collection tool, encompassing 26 attributes meticulously selected to scrutinize their influence on government initiatives to foster homeownership. Survey participants were drawn from Malaysia's B40 income group, which includes individuals and households with income levels falling below RM4,849 (USD1,045.61), as defined by DOSM (2020).

It is crucial to note that, in the context of this study, no specific sampling frames were made available. Therefore, non-probability sampling techniques, specifically convenience sampling, were employed. While the findings through convenience sampling may only be partially generalizable to some of the population, the study aimed to mitigate this limitation by ensuring a sufficiently large sample size. According to Sekaran and Bougie (2016), a sample size of 200 or more is recommended to reduce the detrimental effects of non-normality to negligible. In line with this recommendation and considering factors such as research objectives, precision, confidence level, variability, and population size, the study collected 305 valid responses.

The targeted respondents for this research were Malaysian working adults aged 20 and above who planned to purchase a property within the next 5 years and fell within the B40 income group. From a total of 350 questionnaires distributed to eligible participants within the B40 income group, 305 valid responses were collected and utilized for subsequent data analysis. The survey responses were evaluated using a five-point Likert scale, ranging from "Strongly Disagree" (1) to "Strongly Agree" (5), chosen for its straightforwardness in enabling respondents to articulate their level of agreement concerning the statements corresponding to the 26 attributes (Said et al., 2014; Ab Majid et al., 2023).

In justifying the use of convenience sampling, it is essential to emphasize its appropriateness in this specific context and how it aligns with the research objectives. Convenience sampling, by design, efficiently collects data from willing volunteers within the population, making it suitable for studies where details of the population size are not readily available (Sekaran & Bougie, 2016). While acknowledging that convenience sampling findings may have generalizability limitations, the study sought to compensate for this by ensuring a sufficiently large sample size. This approach aligns with recommendations, as a sample size of 200 or more is

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suggested to mitigate the detrimental effects of non-normality (Sekaran & Bougie, 2016). This justification underscores the study's efforts to balance practical considerations, such as time and cost constraints, with a commitment to achieving meaningful insights from a representative sample within the B40 income group.

3.1. Relative Importance Index (RII)

The Relative Importance Index (RII), as introduced by Chan (2012), served as the tool to quantify the perceived relative significance of each variable as determined by the study's respondents. The RII method is widely recognized for its dependability in assigning ratings to variables based on structured questionnaires employing a Likert scale, as elucidated by Dixit et al. (2019). Prior research has also used the RII approach to rank housing affordability disparities, as demonstrated in studies like Najihah and Bujang (2021). The RII is calculated using the following equation.

$$\text{Relative Importance Index (RII)} = \frac{\sum \omega}{A*N} \quad (1)$$

where ω is the weighting given to each factor by the respondent (ranging from 1 to 5 in this study), A is the highest weight (i.e., 5 in this study), and N is the total number of respondents (i.e., 305 in this study).

The relative importance index ranges from 0 to 1, with the highest RII indicating the maximum impact on the government's effort in homeownership. Akadiri (2011) transformed RII values into five critical levels: High (H) (0.8≤RI≤1), High-Medium (H-M) (0.6≤RI≤0.8), Medium (M) (0.4≤RI≤0.6), Medium-Low (M-L) (0.2≤RI≤0.4), and Low (L) (0≤RI≤0.2).

3.2. Exploratory Factor Analysis

To uncover the relationships between the various market attributes influencing government homeownership efforts, an exploratory factor analysis (EFA) was employed. EFA streamlines the number of measured variables into more manageable parameters, thereby enhancing interpretability and revealing latent data structures. This analysis utilized the Statistical Package for Social Sciences (SPSS version 29.0).

The Kaiser-Meyer-Olkin (KMO) measure was deployed to gauge the adequacy of the sample. At the same time, Bartlett's sphericity test assessed the multivariate normality of the variables (Kong & Kepili, 2023). The significance of Bartlett's sphericity test results was established ($p<0.05$). KMO values, ranging from 0 to 1, indicated the sampling adequacy with a minimum threshold of 0.5 considered acceptable for proceeding with factor analysis, as advocated by Hair et al. (2007) and Tabachnick & Fidell (2007). Subsequently, key variables were selected based on four criteria: an eigenvalue greater than 1, loading values of variables equal to or exceeding 0.3, exclusive loading of a single variable on one factor, and each factor encompassing a minimum of two variables.

4. Results and Discussion

4.1. Demographic

A snapshot of the demographic characteristics of the survey participants is in the Appendix. It is evident that the majority of respondents identified as Malay (n = 143; 46.9%), and a significant proportion was female (n = 223; 73.1%), with a notable concentration falling within the 25-29 years age group (n = 203; 66.6%). Most respondents did not report having dependents (n = 288; 94.4%), indicating that the survey primarily engaged individuals without familial responsibilities. Moreover, a substantial number of participants had attained a Bachelor's Degree (n = 246; 80.7%), reflecting a relatively high level of education within the survey cohort. The category labeled as "Others" accounted for a significant portion (n = 180; 59.0%) of respondents' occupational status, suggesting a diverse range of employment types or, potentially, unemployment among the participants. Notably, Selangor emerged as the most prevalent area of residence among the respondents, with 28.9% of participants residing in this region. Furthermore, a noteworthy share (n = 168; 55.1%) of respondents reported a household income below RM2,500 (USD 539.08), implying that lower income levels may characterize most participants. It is also worth mentioning that most of the respondents identified as renters (n = 196; 64.3%), implying that a significant portion of survey participants do not possess homeownership of the residences they inhabit.

4.2. Data Analysis

Table 1 provides the Relative Importance Index (RII) for each market attribute influencing government-led homeownership efforts. Among the 26 attributes examined, 16 were notably significant, with RII values spanning from 0.809 to 0.874. In descending order of importance, the top five attributes were real estate market condition, house value, housing cost, income level, and housing prices, occupying the ranks of 1, 2, 3, 4, and 5, respectively, within the RII ranking. Based on their significance level, the remaining ten attributes were deemed of high-medium importance.

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Interestingly, government housing policies were ranked at the bottom among all the attributes, suggesting they hold the least importance in influencing government homeownership efforts. Notably, none of the 26 attributes evaluated reached the high and high-medium importance level, signifying that these attributes collectively wield a more substantial influence on government homeownership endeavors.

Table 1

The relative importance index (RII) score for market attribute that affects government homeownership efforts

	Attributes	RII	RII Ranking	Importance Level
FMF1	Housing prices	0.862	5	H
FMF2	House value	0.865	2	H
FMF3	Real estate market condition	0.874	1	H
FMF4	Housing cost	0.864	3	H
FMF5	Interest rate	0.847	7	H
FMF6	Volatility of house price	0.809	16	H
FMF7	Inflation rate	0.852	6	H
FMF8	Income level	0.864	4	H
HFC1	Non-housing expenditure	0.822	12	H
HFC2	Repayment ability	0.845	8	H
HFC3	Income growth rate	0.836	10	H
HFC4	Economic conditions	0.806	17	H-M
HFC5	Financial commitments	0.828	11	H
HFC6	Rent-to-income ratio	0.820	13	H
HFC7	Housing demand	0.803	18	H-M
HFC8	Affordability level of a housing project	0.814	15	H
HFC9	Family composition	0.842	9	H
HAA1	Affordable house supply	0.792	19	H-M
HAA2	Affordable house scheme	0.789	23	H-M
HAA3	Housing affordability index	0.816	14	H
HAA4	Loan approval	0.790	22	H-M
HAA5	Market demand	0.754	24	H-M
HAA6	Financial literacy programs	0.792	20	H-M
HAA7	Ability to provide a down payment	0.791	21	H-M
GHP1	Government housing policies	0.666	26	H-M
GHP2	Government assistance programs	0.710	25	H-M

Source: own study.

The selection of factors hinged on their factor loading values, which were set at 0.3, utilizing varimax rotation. Following the criterion of eigenvalues greater than 1, the exploratory factor analysis yielded four distinct components. Collectively, these four components accounted for 64.98% of the total variance observed. The reliability of the questionnaire data was established through Cronbach's alpha test, resulting in an alpha value of 0.948, which exceeded 0.8, indicating a high level of internal consistency and data reliability. Furthermore, Bartlett's test of sphericity yielded a score of 5461.888, with a significance level below 0.001 for the 26 variables, affirming that the correlation matrix was not an identity matrix, in line with Joseph et al. (2010). The Kaiser-Meyer-Olkin (KMO) measure, assessing all 26 variables, reached a value of 0.935, considerably exceeding the threshold of 0.5 and indicating highly acceptable suitability for exploratory factor analysis (EFA). The resulting total variance explanation from the factor analysis is presented in Table 3, and the factor loading, with a cutoff point of 0.3, for the four factors is detailed in Table 4.

The first factor - the financial market factor, accounts for 46.28% of the overall variance and comprises eight distinct attributes. Notably, the factor loading (in terms of absolute value) on this factor is significantly substantial, particularly for metrics like house value, housing cost, and the condition of the real estate market. The parameter related to house value can be instrumental in bolstering government efforts to broaden homeownership opportunities.

Factor two, denoted as household financial capacity, contributes 8.34% to the overall variance and encompasses nine attributes, most of exhibiting substantial factor loadings. This makes household financial capacity a crucial market determinant that profoundly influences governmental initiatives in homeownership. Factor three is linked to housing affordability and accessibility, elucidating 5.99% of the

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total variance. This category's attributes encompass the availability of affordable housing, housing affordability schemes, housing affordability indices, loan approval processes, market demand dynamics, financial literacy programs, and the capacity to provide down payments. Lastly, factor four centers around government housing policies, representing 4.38% of the total variance. Notably, government housing policies and assistance programs display significantly high factor loadings concerning market attributes that bear upon government-sponsored homeownership alternatives.

Table 2

Total Variance Explained

Factor	Initial Eigenvalues			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	12.033	46.281	46.281	5.160	19.846	19.846
2	2.167	8.336	54.617	5.156	19.830	39.677
3	1.557	5.988	60.605	3.115	11.982	51.659
4	1.137	4.373	64.978	1.913	7.359	59.018

Source: own study.

Table 3

Factor Analysis Loading Results

Variables	Factor			
	1	2	3	4
Housing prices	0.694			
House value	0.746			
Real estate market condition	0.710			
Housing cost	0.728			
Interest rate	0.689			
Volatility of house price	0.462			
Inflation rate	0.702			
Income level	0.668			
Non-housing expenditure		0.558		
Repayment ability		0.595		
Income growth rate		0.675		
Economic conditions		0.661		
Financial commitments		0.724		
Rent-to-income ratio		0.669		
Housing demand		0.742		
Affordability level of a housing project		0.606		
Family composition		0.692		
Affordable house supply			0.458	
Affordable house scheme			0.584	
Housing affordability index			0.512	
Loan approval			0.486	
Market demand			0.547	
Financial literacy programmes			0.574	
Ability to provide a down payment			0.574	
Government housing policies				0.762
Government assistance programmes				0.881

Source: own study.

The results of the factor analysis offer valuable insights into the interplay between diverse market attributes and the government's endeavors in the realm of homeownership. This study seeks to assess these factors and propose an innovative financing model that integrates considerations of future value. The factor analysis findings underscore the multifaceted nature of factors that impact government-led homeownership initiatives. Key determinants include housing affordability, accessibility, and household financial capacity, all playing pivotal roles. Furthermore, the financial market factor highlights the importance of housing prices, real estate market conditions and income levels, while underscoring the significance of government policies and assistance programs.

In addressing housing affordability challenges and supporting government homeownership initiatives, policymakers should adopt a holistic approach, considering these factors. As discussed previously, the integration of forward-looking financing models can complement these efforts by reducing monthly payments and easing debt burdens. Government policies should also be geared towards fostering housing market stability, enhancing the supply of affordable housing, and bolstering the households' financial capacity to become homeowners. Collaboration between the government, financial institutions, and real estate stakeholders is crucial to achieving these objectives and expanding homeownership opportunities across diverse population segments.

In light of the challenges posed by housing affordability and considering market attributes, an alternative financing model that encompasses future value integration is being proposed. The survey respondents' perspective on implementing this model was also considered. Figure 1 illustrates their stance

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regarding including house price offsets in the financing model. A substantial majority of respondents either expressed agreement (42.6%) or strong agreement (26.9%) with this proposition, signifying that a significant portion of the respondents perceive the integration of future value into the financing model as a favorable and pragmatic approach. Approximately a quarter of the respondents maintained a neutral standpoint, indicating a lack of strong convictions in either direction.

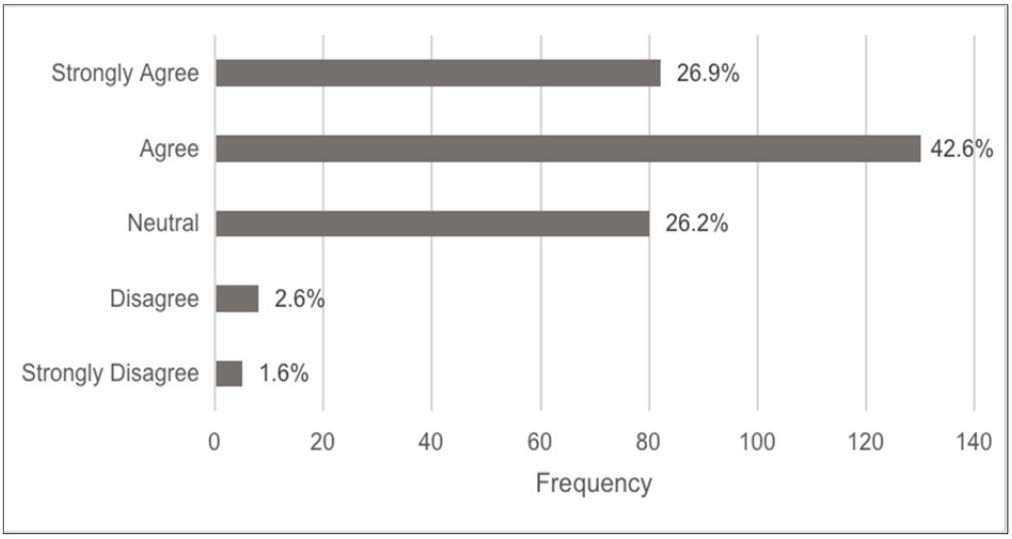


Fig. 1. Respondents' opinion on future value in offsetting house price. *Source*: own study.

A deeper investigation could delve into the underlying causes of this neutrality, such as potential unfamiliarity with the concept or a need for more comprehensive information. A minority of respondents (2.6%) expressed disagreement, while an even smaller percentage (1.6%) strongly disagreed with the statement. While their numbers are limited, it is important to consider their perspectives, as some may harbor reservations regarding the feasibility or efficacy of integrating future value. The respondents' views on two alternate financing models, one incorporating future value within a reverse mortgage framework and the other grounded in Islamic finance, reveal consistent trends. Concerning the model integrating future value with a reverse mortgage foundation, 24.3% of respondents strongly agree, 41.6% agree, and 30.2% maintain neutral positions. In contrast, when regarding the Islamic finance-based model, 27.5% of respondents strongly agree, 41.3% agree and 27.5% express neutral opinions.

The substantial proportion of respondents in agreement or strongly agreeing aligns with the insights derived from the factor analysis, underscoring the critical role of factors tied to housing affordability and the potential impact of future value. This favorable response is also consistent with the earlier discussion on RII ranking, which identified government initiatives and financial market factors as pivotal. The respondents' endorsement of future value integration could synergize with these governmental endeavors. The study aims to propose an alternative financing model that incorporates future value gains support from these reactions. The respondents' positive attitudes toward using future value to mitigate house prices suggest that such a model may find widespread acceptance and contribute to mitigating housing affordability challenges. Most survey participants agreed on incorporating future value into the financing model for house price offsets. This aligns with the study's objectives in offering novel solutions and complements the significance of government initiatives and key attributes highlighted in the RII ranking and factor analysis. Nonetheless, further research and outreach efforts may yield deeper insights into these perspectives' nuances and potential implementation obstacles.

5. Conclusions

The Relative Importance Index (RII) analysis classifies the market attributes that impact government homeownership initiatives into two primary factors of utmost importance: the Financial Market Factor and the Household Financial Capacity Factor. The Financial Market Factor is primarily characterized by housing prices, house value, real estate market conditions, and

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housing costs, underscoring their pivotal roles in molding the housing affordability landscape. The Household Financial Capacity Factor, which includes non-housing expenditures, repayment capacity, income growth rates, and economic conditions, highlights the critical importance of individual financial stability in homeownership.

Attributes linked to Housing Affordability and Accessibility, such as the availability of affordable housing and the approval of loans, also play a role, albeit with lower rankings. Strikingly, Government Housing Policies, including government policies and assistance programs, receive the lowest ranking in importance despite their indirect influence, which should not be underestimated as they complement other factors. Thus, improving housing affordability necessitates a comprehensive strategy considering both the financial market dynamics and individuals' financial capabilities. While government policies may not take the lead as primary drivers, their strategic significance is evident in their role as supportive components of broader homeownership initiatives.

The factor analysis offers valuable insights into the intricate relationship between market attributes and the government's homeownership initiatives, aligning closely with the study's goal of assessing these attributes and integrating the concept of future value into financing models. Particularly noteworthy is the emphasis the Financial Market Factor places on attributes like house value, the state of the real estate market, housing costs, interest rates, inflation rates, and income levels. This underscores the pivotal role of economic conditions and housing affordability as driving forces behind homeownership endeavors. Simultaneously, the Household Financial Capacity Factor underscores the significance of individuals' financial well-being in their pursuit of homeownership, encompassing attributes such as non-housing expenditures, repayment capacity, income growth rates, and financial commitments.

The most crucial factor that surfaces is the impact of Government Housing Policies, wherein government policies and assistance programs appear to wield a considerable influence. This observation harmonizes seamlessly with the prevailing body of literature, underscoring the pivotal nature of governmental interventions in addressing housing affordability challenges. The substantial factor loading linked to government housing policies underscores the significant sway of policy choices on the journey toward homeownership. Moreover, government assistance programs, signified by the highest factor loading, underscore their indispensable role in fostering homeownership, echoing the findings of prior research regarding the critical importance of government initiatives in confronting housing affordability issues.

The sentiments expressed by respondents regarding the novel alternative housing finance models closely mirror these discoveries. A noteworthy portion of respondents, from those expressing neutral views to strong agreement, align with the idea of adopting reverse mortgages as the basis for the innovative financing model. They also anticipate heightened affordability by incorporating future value, showing a strong inclination towards this approach.

In conclusion, this comprehensive study, combining factor analysis with insights from respondents, yields robust evidence in favor of a multifaceted approach to augmenting housing affordability in Malaysia. The intricate interplay of market attributes and the indispensable role of government policies and assistance programs underscores the imperative nature of governmental interventions. Moreover, it highlights the central role of government policies and assistance programs in influencing homeownership outcomes. Enhancing housing affordability necessitates a comprehensive approach, considering financial market dynamics and individual financial capacity. Simultaneously, while the study emphasizes the significant impact of government policies and assistance programs on housing affordability, it is worth considering alternative solutions that could complement or supplement these interventions. One potential approach to explore is the promotion of community-based or cooperative housing initiatives. These initiatives empower communities to collectively develop and manage affordable housing projects, reducing dependency on external market forces or government support. Community land trusts, for example, could be established to acquire land for affordable housing development, ensuring long-term affordability through mechanisms like long-term leases and resale restrictions. The resonance of respondents' opinions with the study's findings underscores the need for innovative financing models that incorporate future value to improve housing accessibility and affordability for a broader population segment. Taking a holistic approach that combines governmental interventions with community-based initiatives is crucial for effectively addressing the

multifaceted challenges associated with homeownership in Malaysia.

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Appendix

Demographic of Study Respondent

	Frequencies, n	%
Age		
20-24 years	203	66.60%
25-29 years	73	23.90%
30-34 years	20	6.60%
35-39 years	6	2.00%
40-49 years	2	0.70%
50-59 years	1	0.30%
Gender		
Male	82	26.90%
Female	223	73.10%
Ethnic		
Malay	143	46.90%
Chinese	118	38.70%
Indian	15	4.90%
Others	29	9.50%
Marital Status		
Single	291	95.40%
Married	14	4.60%

Number of Dependent		
None	288	94.40%
1	12	3.90%
More than 2	5	1.60%
Education Level		
SPM	8	2.60%
Bachelor's Degree	246	80.70%
Master's Degree	37	12.10%
Others	14	4.60%
Occupation		
Self-employed	38	12.50%
Public sector employee	19	6.20%
Private sector employee	68	22.30%
Others	180	59.00%
Area/Region		
Perlis	3	1.00%
Kedah	16	5.20%
Pulau Pinang	23	7.50%
Perak	19	6.20%
Kuala Lumpur	44	14.40%
Selangor	88	28.90%
Negeri Sembilan	11	3.60%
Melaka	18	5.90%
Pahang	1	0.30%
Johor	30	9.80%
Kelantan	12	3.90%
Terengganu	11	3.60%
Sabah	9	3.00%
Sarawak	20	6.60%
Household income		
Below RM2,500	168	55.10%
RM2,500-RM4,849	137	44.90%
Status		
An owner-occupier	109	35.70%
A renter	196	64.30%

Source: own study.

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