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AFFORDABILITY OF AFFORDABLE HOUSING IN NORTHERN REGION OF MALAYSIA

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ABSTRACT

The problem of housing affordability has emerged as a significant concern in urban centers, particularly in emerging countries. While each country defines affordability differently, housing affordability refers to the capacity to possess a residential property or dwelling that satisfies fundamental living requirements in relation to its price, standard, and whereabouts. However, the majority of generally comprised of individuals and families with lower to moderate incomes, residing in various urban areas across Malaysia find it difficult to purchase a home. The aim of this research is to evaluate the housing affordability index in Malaysia's Northern Region (Kedah, Pulau Pinang, Perak, and Perlis) by proposing a maximum affordable housing cost determined by income level. The findings revealed that the housing affordability index has deteriorated as a result of growing income-price inequalities. It is suggested that government or housing

policy makers to be responsible to establish a fair housing price that is determined through convincing and widely accepted judgments. Establishing prices could be based on genuine supply and demand dynamics, rather than being influenced by unfair trading practices, manipulation, or exploitation.

Keywords: Housing affordability, government intervention, affordable housing, homeownership.

INTRODUCTION

Housing is a critical requirement that has the potential to greatly enhance an individual's standard of living. As a result, for the majority of people, acquiring a residence ranks among their foremost priorities. Most people's largest single lifetime investment is in their home. In contrast, others, will merely appreciate home as a safe haven and a means to meet their requirements other than food and clothing (Musaddad et al., 2022). Numerous research has shown the advantages of homeownership for communities as well as for people and families. In certain circumstances, having a stable home environment contributes to social stability and can improve physical and mental health as well as lower the depression and encourage mindfulness (Shaw, 2004).

Affordability has become a significant concern, particularly for urban residents like those in Penang, Johor Baharu, and the Klang Valley, despite the benefits and desire for ownership. The ability of individuals to save money, based on their incomes, not only for housing but also for other uses, is referred to as home affordability (Mostafa et al., 2006). Housing affordability can be established when an individual demonstrates an ability to buy a home (Torluccio & Dorakh, 2011). Assessing an affordable to purchase a property could be based on remaining funds after covering the basic expenses. They are seen as being able to own a home in this situation. On the other hand, an individual who cannot afford the monthly payments and lack sufficient funds for essential purchases, he is perceived as unable to possess a home (Bujang et al., 2015).

In many societies, wealth accumulation has been possible through homeownership (Blickle & Brown, 2019). Homeownership is a unique tool for wealth building that contributes to wealth creation via appreciation of value and the availability of credit. In addition, homeownership is vital to economic growth, promotes wellbeing and is a catalyst to wealth creation for any society (Uwatt, 2019). Therefore, many countries which have strong social housing sectors are focusing on homeownership in their housing policy (Filandri & Bertolini, 2018). It is believed that by expanding homeownership, it can reduce social problems and create better society.

Thus, the changing landscape of the housing market, especially after covid-19 pandemic, has created a need to democratize the housing market and made it more accessible, affordable, and sustainable. Democratizing the housing market involves the accessibility of housing information such as house price, market valuation price, financing rate and others to households through technology-internet (McLoughlin & Young, 2018) creating more informed decisions to homebuyers. Although, internet assists the democratization of housing information, it does not directly solve the homeownership issue globally. This is because the house price offered in the market right now are not in line with the maximum affordable house price through the income level and thus making home become severe to be purchased by the community.

Further, according to Baqutaya et al. (2016), in most major Malaysian cities, housing affordability is a major concern for low and middle-income residents, as a majority have faced challenges in becoming property owners. This situation is due to low-cost affordable home which is in short supply, given that only 25 percent newly released homes are under RM250,000. The presence of an oversupply of expensive housing priced above RM500,000 and a shortage of affordable housing priced below RM250,000 (The Malaysia Insight, 2017).

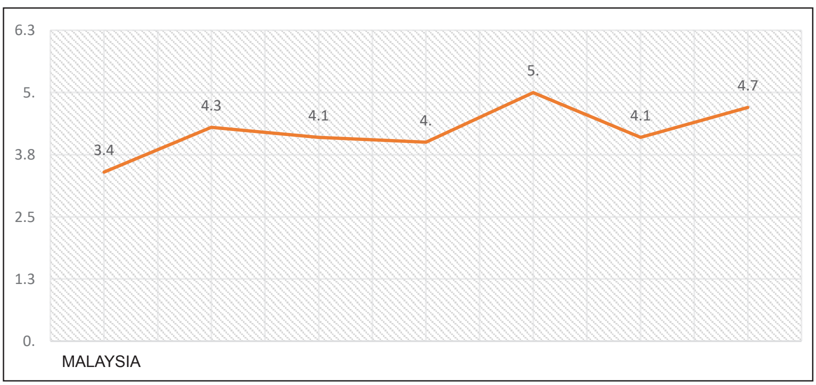
According to the Financial Surveillance Department (Rasid, 2019), it is crucial to conduct research on housing affordability due to the negative consequences and societal instability caused by the inability to own a home. In Malaysia, the majority of unsold homes, which accounted for 73 percent, were previously unaffordable. The states with the highest percentage of unsold homes were Selangor, Kuala Lumpur, Perak, Pulau Pinang, and Johor. The National Property

Information Centre's (NAPIC) Property Market Report 2021 revealed a significant increase in the overhang of residential properties last year. The total number of units reached 36,863, with a value of RM22.79 billion, representing a 24.7 percent volume increase and a 20.5 percent value increase compared to 2020. Selangor had the highest number of overhang units, with 6,095 units valued at RM5.28 billion, contributing 23.2 percent in value and 16.5 percent in volume to the national output. Johor (6,089 units, valued at RM4.72 billion), Penang (5,493 units, worth RM3.56 billion), Kuala Lumpur (3,908 units, worth RM3.17 billion), and Perak (2,748 units) followed closely in that order. Additionally, the presence of 2,569 overhang residential units in Kedah highlights the challenges of affordability faced by the Northern Region of Malaysia, which stems from the disparity between house prices and household incomes.

The ability to afford housing is a crucial factor in assessing a country's socioeconomic equilibrium and pace of development. The public's concern regarding housing affordability has been intensified by the rising costs of housing and rentals, as well as the understanding that housing constitutes the largest portion of a household's budget (Musaddad et al., 2022). This is due to the persisting unaffordability of the Malaysian residential property market for the majority of Malaysians, despite the government's long-standing efforts.

Figure 1

Malaysian Housing Affordability Index



Sources: National Properties Information Centre (2000-2020)

According to Cox and Pavletich (2018), Figure 1 illustrates the housing affordability trend in Malaysia, where a property is considered affordable if its price is less than three times the average monthly household income. The graph indicates a continuous decline in the housing affordability index over a significant period, as the median multiple has surpassed the affordability limit of 3.0. The purchase of newly launched properties has become difficult for many Malaysians, especially those who are first-time buyers, due to this situation. As the median multiplier increased from 4.0 in 2012 to 4.7 in 2020, the cost of residences is expected to rise further (Ganeshwaran, 2019). According to (Musaddad et al., 2022), the task of finding affordable, good-quality housing is becoming increasingly challenging due to current housing policies that establish a maximum income limit for affordable housing without specifying the exact qualifying amount. As a result, a clear differentiation between affordable and unaffordable housing will arise.

The issue of homeownership has long been a polemic, especially among young people. High house prices with lower income increment, thus make it difficult for young people to buy a house causing more people to choose to rent. That is why the value of house price within RM 300,000 which is categorized as affordable and is no longer seen as such by the average low- or medium-income group due to the shrinking household income. Indirectly, it affects the valuation of real estate values that are said to be affordable no longer appear as such because the per capita income of the population for the low and middle class is affected.

Furthermore, the price of such housing continues to be high despite the government’s demand that private developers include affordable housing in their developments. Due to rising home values, low or negative interest rates, and speculative activity, Malaysians are taking out more and more property loans. There is a lot of evidence to suggest that Malaysia’s real estate prices and mortgage servicing capacity have reached their limits. This scenario simultaneously become the largest housing affordability problem. Besides, according to Musaddad et al. (2022), Malaysia’s northern region remains appealing despite a hard market that has resulted in a residential property price increase over the years. This is most likely due to the current housing construction trend favoring high-cost housing over inexpensive housing. A restricted supply of affordable and budget-friendly housing options is suggested by the fact that only 25 percent of recently introduced houses are priced below RM250,000. (National Property Information Centre, 2019).

Property prices are claimed that to be rising as a result of developers' drive to raise prices to maximize profits (Sinar Harian, 2013). The actions of developers who tend to build high-value houses to earn double profit and the house prices has become expensive and buyers are unable to get their dream house. As a result, there is demand from foreigners and investors who take advantage of real estate price speculation. This causes reasonably priced houses to be built in unsuitable locations and high value houses not to be sold or if sold they are not occupied.

Home prices are unstable, volatile, and exceedingly speculative with little correlation to income (Hashim, 2010). Long-term gains in property values resulting from speculative buying are highly likely to be excessive and unsustainable if essential factors such as income growth, population expansion, a supportive monetary policy, and a low unemployment rate are lacking. According to Lim et al. (2021), Malaysia has started giving more importance to achieving long-term economic performance which is crucial for achieving balanced development and ensuring ongoing economic growth, social prosperity, and political stability. They argue that sustainable development in the residential sector is particularly relevant for a country's progress and aligns with its transition into an economy-based nation. The objective of this study is to evaluate the variations in housing affordability in the Northern region by analyzing the housing affordability index trend and suggesting appropriate housing prices. Policymakers involved in the decision-making process need to understand the concept of housing affordability to enhance societal affordability.

LITERATURE REVIEW

Housing Affordability

The affordability of housing in Malaysia has experienced a decline over time, ultimately reaching a state of "severely unaffordable" in various states (Khazanah Research Institute, 2019). Efforts to improve housing affordability typically concentrate on boosting demand, either by directly providing affordable housing, subsidizing housing costs, or reducing housing financing. However, these approaches may not be sustainable as they can result in price hikes and divert government funds from more advantageous purposes. Both the price and income influence the affordability of housing, with income affecting demand and the price being determined by the interaction of supply and demand. Conversely, in cases where property prices are rising too quickly, the government implements measures to curb speculation (Dashveenjit, 2019; Vigneswar, 2020).

Furthermore, housing affordability poses a challenge in both developed and emerging nations, particularly in large cities. The primary catalysts for this issue are the escalating income growth and urbanization resulting from enhanced employment prospects in urban areas. Affordable housing entails ensuring that the quality, location, and construction of housing are satisfactory while being reasonably priced, enabling individuals to meet their other essential needs. Affordability, which is widely embraced, is primarily determined by the interaction between a family's housing expenses and income when assessing the housing problem in various market-based housing systems. Various researchers, such as Bramley (1994) and Ludwig et al. (2002) have proposed that housing affordability is influenced by factors such as household earnings, financing costs, and the levels and distribution of home prices. Additionally, it is historically identified the criteria for qualifying for mortgage finance as a means to gauge the affordability of homeownership.

In terms of consumer capability and willingness to purchase a home, Suhaida et al. (2011) argue that housing affordability is more related to the characteristics of housing services rather than being solely a feature of the housing itself. Furthermore, according to Bramley (2012), housing affordability refers to the capacity of a household to reside in a suitable dwelling unit that meets established standards of adequacy for their specific household size and type, while paying a rent that allows them to sustain themselves without falling below a certain poverty level.

Whitehead (1991) observed that in the past two decades, the focus of the debate surrounding adequate housing has shifted from "housing necessity" to "housing affordability." This shift can be attributed to the increasing acceptance of market-oriented housing policies in various countries. Hancock (1993) defined “housing affordability” as an individual’s capacity to obtain a home based on their income after deducting relevant family expenses. Maclennan and Williams, as cited in Ndubueze (2007), stated that affordability relates to the ability to purchase housing at a price or rent that does not excessively strain household incomes, as perceived by a third party.

Furthermore, home affordability is considered as a family’s capacity to cover housing expenditures without putting a strain on non-housing spending. Meaning that households should not be deprived of essential living standards such as food, clothes, health care, education, and other human capital expenditures because of housing costs (Kutty, 2005). This is in line with (Quigley & Raphael, 2004) who claimed that the society is concerned about housing affordability, which is the single greatest spending item in their budget, as well as the rise in housing costs and rents. Thalmann (2003) claimed that the housing market has an impact on home affordability because of higher-than-market-average prices for housing services. Home affordability will decrease as a result, leading to increased social tension (Gan & Hill, 2008). Families affected by this circumstance would eventually have to pay higher rents since they lack the funds to buy a home. When a pre-existing market fails in certain parts, government intervention is necessary to maximize societal welfare. In this case, social welfare will entail providing appropriate housing.

In addition, the issues surrounding affordability can be viewed as a spectrum of events that originate from a specific case of extreme poverty and homelessness to a more extensive worry about entry into the market. Factors such as housing costs, household income, and financing options are believed to have an influence on housing affordability. There are various options available for residences, including personal ownership, renting, leasing for a fixed period, or requiring a significant deposit. As a result, not all properties are used for residential purposes, as many residences are hired on a large deposit, lease, or rent (Musaddad et al., 2022).

Moreover, Malaysians are struggling with minimal wage gains and high living costs, which discourages them from purchasing property. The primary challenge faced in the regional real estate market is the disparity between individuals' property preferences. Some developers continue to build inappropriate properties and locations (Kathy, 2020) and thus rise the conflict between finance availability and affordability.

There are few factors influence the declining of affordability such as the expense of living. Several prior years have shown a significant cost growth faced by Malaysia's residential property market, notably in major cities and regions. Notably, housing costs continue to rise, albeit remaining below the average Malaysian household earnings. According to the (Valuation and Property Services Department of Malaysia, 2015) there has been an approximate 45 percent rise in housing expenses in the past ten years. Furthermore, housing costs would be considered acceptable if the median house price remained below 3.0 times the annual household wages. In light of these statistics, it is not surprising that Malaysians, particularly millennials, frequently rally and request the government to provide affordable housing. The housing market is saturated, with numerous newly built homes falling within or above the affordability range. According to estimates by the National Property Information Centre (NAPIC), there are 32,810 unsold properties, referred to as overhang units, which encompass 43 percent of condominiums and apartments (Vigneswar, 2020).

Mostafa et al. (2006) also supported the notion that housing affordability is a condition in which people can save a portion of their salary to buy a house while still making other payments throughout the course of their employment. In other words, it is based on household income and expenditure. Therefore, a buyer can afford a home if they spend 30 percent of their gross monthly household income on it. If they spend more, they are considered cost-burdened and may find it difficult to meet basic needs like food, clothing, transportation, and medical care (Bujang & Zarin, 2008). Therefore, according to these criteria, the ability to buy a home demonstrates that home price and household income are correlated, and both variables significantly affect housing affordability. To summarize, housing affordability may be defined as a person's capacity to obtain a home after deducting other essential requirements from his or her household income. Table 1 shows a classification rating of affordability according to median multiple approach. Home is considered affordable if the Median multiple stated at 3.0 and below while become and unaffordable if the value is above 3.0.

Table 1

Classification Rating of Affordability

Rating	Median Multiple
• Severely unaffordable	• Above 5.1
• Seriously unaffordable	• 4.1 to 5.0
• Moderately unaffordable	• 3.1 to 4.0
• Affordable	• 3.0 and below

Measurement of Housing Affordability and Affordable House

Reasonable home prices are a critical component in reducing the influence and cost of living or an insufficient income. Despite the fact that these rates are available and in high demand, most families experience an ongoing increase in the issue of housing expenses. According to Hassan et al. (2021), the decline in the proportion of individuals able to purchase a medium-priced house in a major city is a consequence of the correlation between salary and the substantial rise in housing expenses.

In order to determine and quantify housing affordability, previous scholars employed a variety of methodologies and methods. The capacity to pay for the costs of obtaining a home is referred to as owning affordability. To put it another way, if a family can afford to purchase a property after paying a specific sum for it, it indicates they can afford to buy other things (Whitehead, 1991). The major source of information used to assess home affordability is household income. If both husband-and-wife work, household income refers to the total of both of their earnings. If only one spouse works, the household income is calculated based on the income of the working spouse. As mentioned by Bank Negara Malaysia in 2017, the median multiple, housing cost burden, and residual income were the three (3) measures employed in Table 2 to determine the classification of a housing market as affordable or not.

The primary measure of affordability for homeownership in Malaysia is the median multiple approach, as changes in housing financing regulations often result in higher house prices that impact housing expenses and disposable income. An example of a median multiple, a house could be bought if the price of the house is related to three times the annual income.

Table 2

Measurement of Housing Affordability

Measurement	Definitions	Advantages	Disadvantages
Median Multiple (Price to Income Ratio)	The maximum median house price is three times higher than the median annual household income (example: ratio of house price to income 3.0 and below)	• Easy to calculate. • Comparisons between countries and within a country from time to time can be made.	• Regardless of credit (financing) rules
Housing Cost Burden	Housing spending (example: mortgage repayment) is less than 30% of household income	• Easy to calculate. Comparisons between countries and within a country from time to time can be made. • Considering the role of non -housing financing and household spending. • Comparison of home ownership between countries and within a country	• Inflexible 30% Threshold. • Differences in cost of living and mortgage finance between nations may have an impact on how accurate comparisons across nations are.
Residual Income	The balance of the income (difference less costs not related to the home) that is needed to finance the monthly mortgage obligation	• Taking into account the consequences of debt and household spending habits. • More reflects the household's capacity for home acquisition.	• Strictly cross-national comparisons. • Needs specific information on household features, cost of living, and housing costs.

Sources: Bank Negara Malaysia (2017)

According to Dermographia International's MM methodology, an MM of 3.0 or less suggests a low-cost housing scenario. Although the accuracy of this approach varies by country, there are numerous more frequently used ways for comparing homeownership rates.

Furthermore, affordability is also graded on a scale of 0 to 5. The housing distribution in the market is characterized by minimal distortions and is capable of meeting effective demand, as indicated by a 3.0 median multiple.

According to Ndubueze (2007), the house price-to-income ratio (PIR), which is a widely used affordability ratio, is one of the housing cost techniques. Many studies utilize PIR, which is defined as the ratio of median home price to median family income. Many researchers have relied on this ratio as a gauge of affordability because housing spending tends to grow in lockstep with home prices. This is because the price of a property is a major factor of home ownership affordability. As a result, increasing property prices are believed to increase monthly mortgage payments as well as making it more challenging for prospective buyers to save enough money for a down payment, which is typically a percentage of the home price (Gangwar, 2016). Thus, purchasers must earn more to fulfil the qualifying criterion. Due to changes in housing finance regulations, which lead to higher home prices, the median multiple approach is employed as the primary indicator of housing affordability in this article, thereby resulting in a higher burden of housing costs for those with lower incomes.

The level of affordability in housing serves as a significant indicator of a country's socioeconomic equilibrium and pace of development. There are still global concerns that the main challenges are increasing incomes and urbanization, driven by better employment opportunities in urban areas making location and demographic factors determine the ability to have a house. Therefore, the challenge of less sustainable affordable housing is often considered to apply to affordable housing. Every nation in the world has affordable housing as a top priority. Housing is not the only physical structure that protects its people; socioeconomics, politics, community, and environment are all intertwined. It is crucial for a graduate research assistant to comprehend the measurement of affordable housing prices relative to income level, as housing affordability is subjective and varies depending on individual income and the value of the property. Critics contend that categorizing Malaysian houses as "severely unaffordable" would be excessively generalized given the variations in household income and property prices across different states (Dashveenjit, 2019; Vigneswar, 2020).

Affordable housing refers to habitable and secure housing that caters to individuals belonging to the B40 and M40 income categories. According to the Ministry of Housing and Local Government (2019), the provision of affordable housing can be undertaken by government entities (federal, state, or private developer) or private developers, either individually or through cooperation. It is essential to customize the construction of affordable housing in order to cater to the distinct requirements of each state or location and its respective residents.

Figure 2

Displays the Formula for Calculating A Reasonable Home Price

Affordable Home Price = Median income x 12 months x 3.0

Sources: National Properties Information Centre; Khazanah Research Institute (2015)

METHODOLOGY

The objective of this paper is to investigate the housing affordability trend in the Northern Region of Malaysia. Additionally, it proposes determining the maximum price at which houses can be considered affordable in the same region between 2000 and 2020, using data from the National Property Information Centre (NAPIC), the Department of Statistics Malaysia (DOSM), and reliable sources such as books, websites, published papers, journal articles, and other references. To evaluate the housing affordability index, the paper employs the median multiple approach and compares the Median House Price with the Affordable Median House Price.

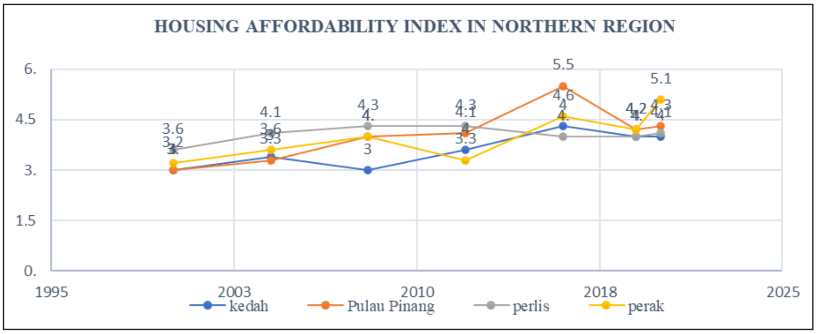
RESULT AND DISCUSSION

From 2000 to 2020, Figure 3 illustrates the patterns observed in the Housing Affordability Index within Malaysia's Northern Region. The data shown in Figure 3 demonstrates that the median multiple in the Northern Region of Malaysia has consistently been higher than the affordability threshold of 3.0. Throughout the initial decade (2000-2010), the median multiples for all states primarily ranged from 3.0 to 4.0 and 4.0 to 5.0, indicating a state of moderate to serious unaffordability. During the period from 2010 to 2019, Pulau

Pinang experienced a significant level of unaffordability in housing, as indicated by its highest median multiple of 5.5 among all states, surpassing Perak (4.6), Kedah (4.4), and Perlis (4.0) by 2016.

Figure 3

Trends in Malaysia's Northern Region's Housing Affordability Index



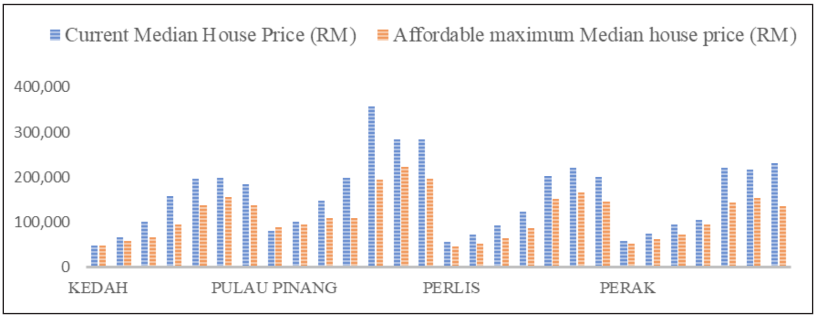
Housing affordability is becoming more challenging due to the rising average property prices, resulting in household income outpacing that of Perak, Kedah, and Perlis (Musaddad et al., 2022). This is congruent with the findings of a study by Leng et al. (2017), who discovered that while housing costs have risen beyond the limits of most Penangites, particularly in highly urbanised places such as Penang Island, urbanites' income levels have not increased at the same rate. This scenario became the most serious home affordability issue at the same time (Cox & Pavletich, 2018).

Moreover, in 2020, the residents of Pulau Pinang allocated a higher monthly budget for household expenses (RM2565.68) compared to the communities in Kedah (RM1788.84) and Perlis (RM1775), thereby intensifying the challenges of affordable housing (Musaddad & Mohd. Yusof, 2022). Since the majority of individuals cannot afford the median home price, the rise in average household expenditure indicates a decline in housing affordability across the country. Besides that, growing land prices (RM211.2 per sqm in 2020) have an impact on Pulau Pinang's affordability of housing. This is consistent with a study by Wen (2017) that discovered a causal association between land price and house price. From a demand perspective, growing housing costs drive up land prices, but from a supply perspective, land costs also contribute to rising housing costs, driving down the affordability of housing.

Perak has adopted a median multiple of 5.1 in 2020, replacing the previous measure. This change indicates that the Northern region now shares a perception of affordability similar to that of the Central region, as the remaining areas still fall under the classification of "seriously unaffordable." In addition to Pulau Pinang and Perak, Perlis has also witnessed a 9.09 percent decrease in property prices, accompanied by a 12 percent decline in household income. Conversely, Kedah has witnessed a 7.62 percent increase in house prices despite a decrease in family income by 11.4 percent in 2020, suggesting that the housing market continues to thrive amidst the Covid-19 pandemic. The impact of the pandemic on commodity prices and the supply chain could contribute to the rise in housing prices. Additionally, the Malaysian housing market has long faced challenges such as limited inventory, rising operational costs, diminishing affordability, increasing levels of family debt, stricter credit requirements, and declining consumer confidence.

Figure 4

Affordable Median House Price Vs Median House Price



In Figure 4, a comparison is made between the current and affordable median housing prices in Malaysia's Northern Region. The largest variations in prices were observed in Pulau Pinang, with a progression from RM-8,228 (-10.3% = 2000) to RM6,600 (6.5% = 2004) to RM38,282 (25.9% = 2008) to RM88,883 (44.8% = 2012) to RM162,270 (45.5% = 2016), and finally to RM87,936 (30.9% = 2020). Perak followed with price ranges from RM5,134 (8.8% = 2000) to RM96,976 (41.5% = 2020). Additionally, Perlis exhibited increasing gaps from RM10,212 (18.4%) in 2000 to RM20,797 (28.4%) in 2004, RM28,250 (30.3%) in 2008, RM37,237 (30.2%) in 2012, RM50,448 (25%) in 2020, and RM54,616 (27.2%) in 2020. Kedah also displayed a growing disparity, with prices escalating from RM264 (0.5%) in 2000 to RM7,703 (11.8%) in 2004, RM33,647 (33.4%) in 2008, RM62,892 (39.9%) in 2012, RM59,452 (30.2%) in 2016, and RM47,156 (25.5%) in 2020.

As a result, we can see that pricing disparities have increased in the Northern Region. Long-term affordability should be associated with the growing mismatch between rising household income and rapidly rising housing costs in this situation, even if short-term affordability can be attributed to supply-demand (Gihring, 2000). Homes will become considerably more unaffordable to buy if housing costs climb much more quickly than income (Musaddad et al., 2022; Pettinger, 2019). At the end, renting will rise soon, including for social housing, and not just homebuyers will be impacted. Demand and supply, two factors that are significant in the residential real estate market, often have an impact on home prices. A point of equilibrium in market pricing can be determined by the connection between supply and demand. According to Harvey and Jowsey's (2004) home prices are influenced by both supply and demand, as well as the ability and desire of households. Household ability and desire, which are directly linked to socioeconomic, environmental, and kind and accommodation factors, are affected not only by market speculators, particularly those who are wagering against existing stocks.

The influence of population macroeconomics and socio demographics on the increase in commodity prices has been a topic of debate among economists. Evaluating the economic and sociodemographic progress of the population can help assess the affordability of housing (Bujang et al., 2015; Mostafa, 2008; Wong et al., 2010). This assessment can also impact various factors, such as GDP growth (Clark & Coggin, 2011); Dreger & Zhang, 2013), household income (Abdul Shakur et al., 2017; Sani, 2015), population size (Van Doorn et al., 2019; Saita et al., 2016), land cost (Yap and Ng, 2018; Selvaraja et al., 2018), inflation rate (Zhu, 2004; Zainuddin & Yusof, 2010), interest rates (Dreger & Zhang, 2013; Himmelberg et al., 2005; Quigley & Raphael, 2004), and rental rate (Meera & Abdul Razak, 2009; Mahmoud A. El-Gamal, 2008; El-Gamal, 2006; Yusof et al., 2016; Musaddad & Maamor, 2022). These variables can lead to changes in the affordability of housing commodities.

Table 3

Affordable House Price in Northern Region

Year	Median Income Per Month (RM)	Maximum Affordability Median House Price (RM)
	Pulau Pinang	
2000	2,448 x 12 x 3.0	88,128
2004	2,650 x 12 x 3.0	95,400
2008	3,051 x 12 x 3.0	109,836
2012	4,039 x 12 x 3.0	109,836
2016	5,409 x 12 x 3.0	194,724
2020	5,474 x 12 x 3.0	197,064
	Perak	
2000	1,481 x 12 x 3.0	53,316
2004	1,732 x 12 x 3.0	62,352
2008	1,999 x 12 x 3.0	71,964
2012	2,665 x 12 x 3.0	95,940
2016	4,006 x 12 x 3.0	144,216
2020	3,759 x 12 x 3.0	135,324
	Perlis	
2000	1,258 x 12 x 3.0	45,288
2004	1,459 x 12 x 3.0	52,524
2008	1,789 x 12 x 3.0	64,260
2012	2,387 x 12 x 3.0	85,932
2016	4,204 x 12 x 3.0	151,344
2020	4,043 x 12 x 3.0	145,548
	Kedah	
2000	1,338 x 12 x 3.0	48,168
2004	1,607 x 12 x 3.0	57,852
2008	1,861 x 12 x 3.0	66,996
2012	2,633 x 12 x 3.0	94,778
2016	3,811 x 12 x 3.0	137,196
2020	3,829 x 12 x 3.0	137,844

Moreover, the increasing gaps in Malaysia between the prices of affordable houses and the median house prices indicated a preference among housing developers for constructing upscale residences, as it ensured a greater profit margin (Hashim, 2010). The market bubble will develop when investors are convinced, they will receive profit returns while the basic economic causes are insufficient to sustain price growth. If there is an increase in commodity prices as a result of investors engaging in speculative activities and manipulating prices for gain, the market has entered a bubble. The market's demand will rise as a result of this circumstance. In light of this, this study proposed the maximum housing price that a community in the Northern Region could pay based on income level.

The maximum acceptable residential price for Pulau Pinang, Perak, Perlis, and Kedah is determined by multiplying the annual median income of households by 3.0, as shown in Table 1.3. Based on Table 1.3, Pulau Pinang had a suggested median house price of RM285,000 in 2020. However, when considering income data in the median multiple calculation, the maximum affordable house price would be RM197,064, indicating a significant difference of 30.9 percent. This emphasizes the notable increase in current house prices. According to Ganeshwaran (2019), affordability in Malaysia has deteriorated, as shown by the rise in the median multiplier (the ratio of home prices to yearly household income) from 3.9 times in 2012 to 4.8 times in 2016, making homes even more unaffordable for the majority of Malaysians, particularly first-time home buyers.

According to reports from KRI in 2015 and 2017, the percentage of rural residents in Malaysia who own a home is 81.2 percent, while the percentage for urban residents is 69.1 percent. Over time, property affordability in Malaysia has deteriorated, leading to a decline in Malaysians' purchasing power. The unaffordability of the housing market poses a significant challenge for Malaysians, as high prices hinder many individuals from purchasing available houses in the market. The National Housing Policy 2018-2025 recognizes this issue, as reported by the News Straits Times in 2018. As per the Bank Negara Malaysia (2017) report, the price range for affordable houses falls within RM165,000 and RM242,000, determined by the annual median income of RM55,0020. The current housing expenses in Malaysia, calculated through the median multiple of 4.4, are significantly unaffordable for a large portion of the population. In essence, the existing housing policy establishes an upper limit for income eligibility for affordable housing, while not explicitly stating the precise value.

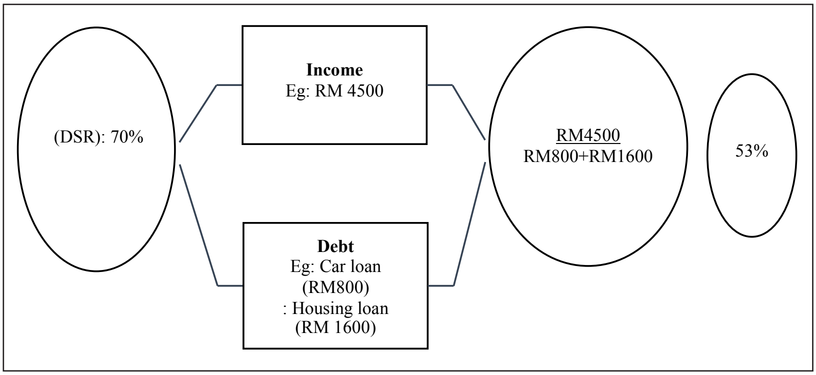
Housing Loan according to Debt Service Ratio

Housing loans or home financing are used in particular among the medium- and low-income groups to seek financial support for property acquisitions. As anticipated, this loan has a huge effect on the real estate market. The management of loans is essentially the responsibility of commercial banks and other financial institutions, who in Malaysia are in charge of the home credit market. The debt service ratio (DSR), also referred to as the debt ratio, represents the percentage of an individual's overall debt in relation to their household income. It evaluates an individual's capacity to fulfill their debt responsibilities. When considering the purchase of a home in Malaysia, it is advisable for the DSR to remain below 70 percent in most cases (Property Guru, 2020).

Due to the lower risk of failure and the assurance of timely monthly payments, banks exhibit a higher interest in cases where the DSR is low. Unfortunately, numerous Malaysians who apply for home loans face rejection due to their lack of awareness regarding their personal DSR, which usually exceeds the maximum limit set by the bank. The avoidance of housing loan applications is influenced by various important factors such as borrowers having excessive debt, insufficient residual income after covering monthly expenses and financial obligations, unfavorable credit histories, and inadequate documentation to prove their ability to repay the loan. The DSR formula is utilized by the bank to assess a borrower's ability to meet their monthly repayment obligations:

$$\text{Debt Service Ratio (DSR):} \quad \frac{\text{Debt}}{\text{Net Income x 100}}$$

Debt, which includes payment made through credit cards, personal loans, and student loans, differs from net income as it incorporates all current financial obligations, without excluding deductions like income tax and EPF.



An illustration can be provided. Individual A's monthly income is RM4,500 and they allocate RM800 for car loan payments and RM1,600 for mortgage payments. According to the aforementioned formula, banks often approve loan commitments with a Debt Service Ratio (DSR) of less than 70 percent. Individual A's DSR stands at 53 percent, indicating that their expenses surpass RM3,150. Consequently, unless their monthly earnings improve, they cannot undertake additional monthly commitments beyond RM750. Possessing DSR information is crucial for a potential buyer's ability to select the bank(s) to approach, increasing their chances of obtaining approval for a house loan application on the first attempt. Table 4 calculates monthly installments using both the property's cost and the income amount.

Table 4

Estimation of Monthly Installments based on Income Level

House Price	Loan (90%)	Tenure	Monthly Installment	Minimum Income
100,000	90,000	30	490	2,000
200,000	180,000	30	935	3,000
300,000	270,000	30	1368	3,500
400,000	360,000	30	1,824	5,000
500,000	450,000	30	2,280	6,000
700,000	630,000	30	3,192	8,500

Source: Team CompareHero.my (2019)

Table 4 provides a depiction of monthly payments, considering different income levels, which encompass house price, loan amount, loan duration, monthly installment, and the minimum income required. Moreover, it demonstrates that the monthly payments for every classification stay under 30 percent of the overall income. Despite the desire for property ownership, challenges arise from the rising cost of living and slow salary growth, which defer individuals' ability to meet financial obligations such as retirement plans, savings, investments, and car loans. The main aim of this core principle is to ensure that people have enough disposable income to fulfill these obligations.

As per the 2016 Annual Report of Bank Negara, individuals earning RM3,000, RM5,000, or RM10,000 monthly were found capable of financing a property priced at RM176,000, RM8,000, or RM10,000 respectively. This estimation is based on Malaysia's specific conditions, including the average debt service ratio. Additionally, it is concerning that merely 35% of recently constructed homes available for sale were considered affordable, while the remaining properties exceeded RM500,000 in cost.

CONCLUSION

The underlying belief is that choosing to own a home is more desirable than renting due to the enhanced sense of security, autonomy, and economic benefits it provides, resulting in increased overall satisfaction with housing. The focus of this paper is on the disparity between the availability and need for reasonably priced housing in Malaysia's Northern Region, with specific emphasis on the conceptual foundations of housing affordability. The fact that the current housing policy limits the number of houses that can be purchased for an affordable price demonstrates that the price of homes in Malaysia's Northern Region does not correspond to the community's ability to pay.

Therefore, it is advisable to establish policies aimed at addressing the issue of housing affordability while also identifying the factors contributing to the discrepancy or differentiation between affordable housing and housing affordability. This approach can indirectly constrain housing prices and mitigate excessive property. It is recommended that future research endeavors extend this line of inquiry to encompass other regions as well. In the context of housing affordability, when the balance between supply and demand is disrupted such as inflated demand or monopolized supply. This imperfect market mechanism will then serve as the basis for decision-making. In such situations, the government's task of establishing a justifiable housing price becomes essential, requiring decisions that are both convincing and supported by all stakeholders in the market. Establishing prices based on genuine supply and demand dynamics, rather than being influenced by unfair trading practices, manipulation, or exploitation is suggested to the housing policy makers. In addition, the government is responsible to establish a fair housing price that is determined through convincing and widely accepted judgments.

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