Location Housing Affordability as an Indicator for Quality of Life in Malaysia

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Abstract

To have a quality of life is the ability to own a house. Housing affordability affects the quality of life concerning household well-being and economic security. The research sets to evaluate the location housing affordability for the low-income group base on housing and transportation expenditures in urban areas. 148 respondents have interviewed and by using an integrated Location Housing Affordability, it had indicated that location does influence housing affordability. The findings showed the urban area for the low-income group is seriously unaffordable. "Location" should be part of affordable housing because it affects housing affordability thus concerning the quality of life.

Keywords: Quality of life, Location housing affordability, Transportation expenditure, Low income group

1.0 Introduction

The condition of socioeconomic stability and development in a country concern the housing market. Therefore the ability to own a house is very crucial. The fundamental economic and social needs for everyone is the right to appropriate housing yet affordable and adequate needs (Drudy, 2007). It can be the same as the quality of life because the quality of life represented by evaluating the social, economic and environmental conditions. Comfortable housing will contribute to health, well-being and quality of life. Therefore owning a home is the dream of every individual to again that a quality of life especially for the low-income group (Hafazah, 2012). It is very significant to develop a structure of measurement of quality of life especially the affordability to own a house in an urban area

Housing aspects have become a major concern in every part of the world because it shows people's achievement and also represents the prosperity of a country. The national economy also contributed by the housing sector because it opens job opportunities and creates a variety of industry sectors including production, finance, insurance and maintenance. Therefore, the housing sector has laid a major role in the economy of the country in term of employment, capital market, consumption and financial wealth thus stimulating in the business cycle. The housing price in Malaysia depends on population, demand and supply, location, physical characteristic, accessibility, developer, the cost of material and income. It is also influenced by neighbourhood factors as people nowadays will likely choose a better neighbourhood. Rapid urbanisation had caused an increase in population in all cities around the world. Housing affordability has become an issue with the ever rising housing prices especially in an area with the phase of rapid urbanisation. The housing affordability crisis has emerged for the past years and had increasingly documented in recent media reports.

Housing within an urban area is more expensive as compared to housing in a rural area, added further there were few differences in the locations of greatest housing affordability between housing tenures, and this proven with the spatial mismatch of location and

affordable houses (Dodson 2005; Khazanah Research Institute, 2015). Housing prices are also heavily dependent on location since there is a relation to the role of location in the housing market (Ahmad Fawwaz, 2016).

Therefore location does have an influence not just on housing expenditure but also towards on-going transportation expenditure, in particular, the distance between residential neighbourhoods and employment centres (Lipman, 2006; Mattingly & Morrissey, 2015). However, housing prices in the distant urban area are lower but compensate with high vehicle dependency, long distance commute which linked with high costs of petrol and vehicle maintenance.

To make a comparison between two residential areas are very crucial to identify housing affordability of an urban area for the low-income group. This research focuses on location housing affordability as an indicator for quality of life (Streimikiene, 2015). With this comparison of the two residential areas, the finding from the research will be more fitting and easily relates to location housing affordability. To achieve that the aim of the research will evaluate the location housing affordability for the low-income group base on housing and transportation expenditures in urban areas of Selangor. Three objectives to achieve the aim are (1) To analysis how does affordability differ when transportation expenditure is part of affordability index? (2) To evaluate households' expenditure on housing and transportation vary for the two urban residential areas and (3) To determine housing affordability for the low household's income in an urban area.

The finding from the research would, therefore, provide various results of housing affordability of low-income households in an urban area based on Location Housing Affordability. At the same time, the result would show that housing affordability should consider as part of measuring the quality of life with emphasize on location for affordable housing.

2.0 Literature Review

2.1 Housing affordability on quality of life

In Malaysia, the quality of life have been defined as encompassing personal advancements, a healthy lifestyle, access and freedom to pursue knowledge, and attaining a standard of living which surpasses the fulfilment of the basic and psychological needs of an individual, to achieve a level of social well-being compatible with the nation's aspirations (Malaysia Quality of Life Report, 2011). To achieve this quality of life, an evaluation has been made based on socioeconomic development policies and programs on the quality of life of Malaysians. The quality of life divided into 11 component including housing as one of the components. The indicators for quality of life of housing are percentage of low-cost housing units to low- income household, percentage of housing units with piped water and percentage of housing units with electricity.

All of these indicators refer to the provision of the low-cost housing and the availability of utilities, but there is no indicator on housing affordability. There are few comparable indicators on measuring the housing condition together with the effect welfare and health that provide details on physical features of a house such as the accessibility and availability of electricity, water supply, the connection of the internet and several of amenities within the housing area. Apart from these physical features, the environmental characteristics of the located housing have been one of the indicators of the quality of life of housing such as the experience of noise, indoor pollution or nuisance of the community in the area.

In term of monetary, housing expenditure is a large amount of the household budget. The low-income group, however, have extra strain on a budget for others essential expenditures such as food, transportation, healthcare and education. According to Streimikiene (2015), households were paying more than half of their income on housing expenditure usually spend substantially less than other families on essential expenses such as food, clothing, and health care. As the size of the family increases, these difficulties tend to worsen. If the provision and conditions of low-cost housing are good on the one hand, the high housing expenditure on the other side constitutes a major concern for households.

Hence the housing stress will formulate and hinder the relations between the household members and damper the development of the children in term of the children education and health (Nor Rashidah et al., 2012). It agreed in the past that location of the low-income group has fewer amenities compare to other income groups, due to their ability to spend more on great amenities (Bieri, 2013). Therefore housing affordability can impend the households' physical well-being and economic security. The provision of adequate and affordable housing is essential in a growing economic nation and also part of the quality of life.

The important aspect of provision is how affordable housing is to the people? Based on a report by Khazanah Research Institute (2015) housing prices were also heavily dependent on location. For example in the State of Selangor, Khazanah Research Institute concluded the state as moderately unaffordable because the research had included rural areas such as Kuala Selangor, Hulu Selangor, Kuala Langat and Sabak Bernam, where the housing price is lower as compared to urban areas of Selangor, Petaling Jaya, Subang Jaya and Shah Alam. Evidently, there is an issue of housing affordability in the urban area, and spatial geographical location does play as part of housing affordability. Finding affordable, secure and adequate housing in term of location is one of the biggest problems of low-income households' today especially in urban area.

2.2 Housing affordability in Malaysia

For the past ten years, there has been a sharp increase in housing prices in Malaysia, especially in urban cities. According to the National Property Information Centre (NAPIC), there was an 8% increase in the first quarter of 2016. For terraced houses, the average price rose by 8.2% (4.4% inflation-adjusted) during the first three months of 2016 and because of this, to own a house will become more difficult because of the ever increasing of housing price. Plus, there is a 40% difference in demand for affordable housing with its suppliers in the country at the moment. It proved that there is an issue with the demand and supply of the affordable housing.

Therefore, resulted in higher demand for housing. An increase in house prices is inevitable because of the effects of high economic growth and an increase in the goods as well as existing land for construction of houses which has become increasingly limited due to fierce competition with other land use. These factors had indirectly resulted in the price of all property including the housing to rise.

Both the increasing prices and the lack of supply and demand of housing affects housing affordability. Khazanah Research Institute (2015) agreed that Malaysia is experiencing severely unaffordable houses through its research which focused on the states in Malaysia rather than a specific urban area where the housing price is higher compared to rural area. There are many types of research on housing affordability in Malaysia which focused on different types of sociodemographics such as low income group and also on youth by using various measurements fitted to their research (Khazanah Research Institute, 2015; Zafirah, 2014; Ariffian Bujang et al, 2010; Khadijah & Rosadah, 2002; Norazmawati, 2007). The main problem with housing affordability in Malaysia is that there is no specific indicator or measurement for housing affordability.

Consequently, the measurements from previous researchers were only adaptations of measurements from other countries which were relevant for Malaysia's situation. The various definitions and concepts of housing affordability have made a variety of approaches toward the measurement of housing affordability such as house price to income ratio, residual income after housing costs, and purchase and repayment affordability (Bieri, 2013). However, there is no agreement on the correct or precise measurement.

2.3 Housing affordability concept

The concept of housing affordability was first used in the United Kingdom and the United States since 1960 and 1980 with different policy objectives. In the United Kingdom, the concept of housing affordability using their current housing system based on a market-oriented system a view of helping those in need. Households have to balance their housing costs, on the one hand, and their non-housing expenditures, on the other, given a limited income (Chowdhury, 2013). However, housing affordability still lacks a precise and exact definition because of affordability is not a natural characteristic of housing but rather a relationship between incomes and relative prices (Diwa et al., 2016). Factors that affect the ability to buy a home can be divide into macro and micro factors.

Macro factors are house price, location, financial loan, financial loans interest rate, monthly payment, and money or cash advance process. Micro factors include monthly income, occupation, age, consumption patterns, total dependency, monthly money surplus and much more. Subsequently, the economic factor of a household is the focal problem for housing affordability. All of these factors are the independent variables that are related to measuring the housing affordability. When this economic factor has changed, it will indirectly affect the housing affordability of the household (Norazmawati, 2007).

Housing affordability is to ensure housing provided affordable for each high-income, middle-income or low-income groups. The affordability problem concerning the housing market is one of the most controversial issues in most developed and developing countries. From various perspectives and context that have considered, the term of housing affordability has concluded as the ability of an average household of willingness to own and sustain an average home (housing-related costs) without being financially distressed after the purchase and own a socioeconomic stability (Hassan et al., 2017).

2.4. Housing affordability measurement

Most countries including Malaysia had commonly practised housing expenditure-to-income ratio. It is easily understood that the meaning of affordable and unaffordable whereby allocated 30% of the income, on which if the housing cost more than 30% of income is considered as unaffordable. Nevertheless, the indicator measurement for housing expenditure-to income ratio has several limitations. One of the critics for this indicator is the incompetence of distinguishing the quality of housing because higher housing prices simply have better characteristics relatives to another area. Where else lower housing price that household spend less than 30% of the housing cost have the insufficient characteristic to live such as an unsafe structure of the building and located far from a known working area. Nevertheless, for higher housing expenditure the percentage of income will burden along with higher household interests. However, this measurement can be applied to identify the low and middle-income groups' financial problem related to housing affordability.

An alternative method of measurement is the residual income measure which could reflect on the household's ability to own a house. For easy understanding, residual income is the balance after paying the housing expenditure which the household has difficulty to meets their non–housing needs at some level of capability of influenced by social and cultural norms. (Stone, 2006). Some have found that residual income is suitable because of the ability to scale the unaffordable household, especially for the low household's income. The residual income needs to be compared to the budget of the standard of household type because every household types have different non-housing expenditure and cannot be measured with the various household types. It is useful to assess an individual housing affordability because the size of the household plays an important figure for residual income.

In recent years, there has been a new indicator on housing affordability which includes transportation expenditure (Litman, 2014). The reason because of housing and transportation are the two largest expenses for most households. Together, they account for more than one-half of all household spending (Jewkes & Delgadillo. 2010). The transportation expenditure will measure the geography and transport factor housing affordability. The three most important variables to determine transportation expenditure are vehicle ownership, vehicle usage and public transit. A significant sum of an amount of income is used for transportation expenditure because of higher vehicles ownership due to the shortage availability of public transport in an urban area that has access to employment and services.

Housing in distant locations from employment centre can harm the financial sustainability of the ownership. Although finding a house in a suburb at a lower price used to be a strategy that resulted in savings, but it increasing costs in transportation will inevitably wipe out any savings. The scale of measurement of housing and transportation expenditure was chosen for this research since it had

considered location as a factor of affordability. According to Litman (2014) to achieve affordable life both housing and transportation expenditure must be under 45 percent than total income and therefore the percentage mark will be the core affordability category for the Location Housing Affordability.

3.0 Research Methodology

This research involves a significant amount of understanding on housing affordability that relates to the quality of life, as well as the low-income group of an urban area in Malaysia. The focus is mainly to identify the location housing affordability in an urban area well as an indicator for quality of life. This attention is critical to ensure the location housing affordability is efficient and workable so that the finding will help in developing new policies on quality of life for affordable housing in the future.

The research design was through Case Study. Case studies for situations capable of uncovering in-depth information about an individual's behaviour and the social environment enable the researcher to understand changes in the behaviour and environment (Chua, 2012). The main function of the case study will be a descriptive case study, which the research will undergo a narrative theory before the survey conducted, and this theory will use as the guide for the research. For this research, the case study will focus on the two prominent residential areas in Selangor Darul Ehsan.

3.1 Case study area

Selangor Darul Ehsan was chosen because of its highest population in Malaysia. Together with the accessibility of highway and public transport, Selangor appeared to be the most developed state by having good infrastructure and high standard of living. The two residential areas selected as case studies were Subang Bestari and Putra Height. These two areas are prominent residentials in Petaling district of Selangor. Putra Height has ranges of houses including the low-cost housing, and the same goes for Subang Bestari. Therefore the people living in these two residential areas are within the targeted group of income. The connection of highways and main roads surrounding both Putra Heights and Subang Bestari have made it one of the best residential areas to live.

The difference between these two residential areas is that Putra Height has the availability and accessibility of public transportation, and while Subang Bestari does not have the connectivity of public transit. The recent opening of the extended LRT lines to Putra Height had indicated that this residential area is very convenient for public transit users. The importance of public transit is that it is one of the variables for the measurement of transportation cost. The comparison between a residential area with a public transit and one residential without a public transit will indicate the location housing affordability.
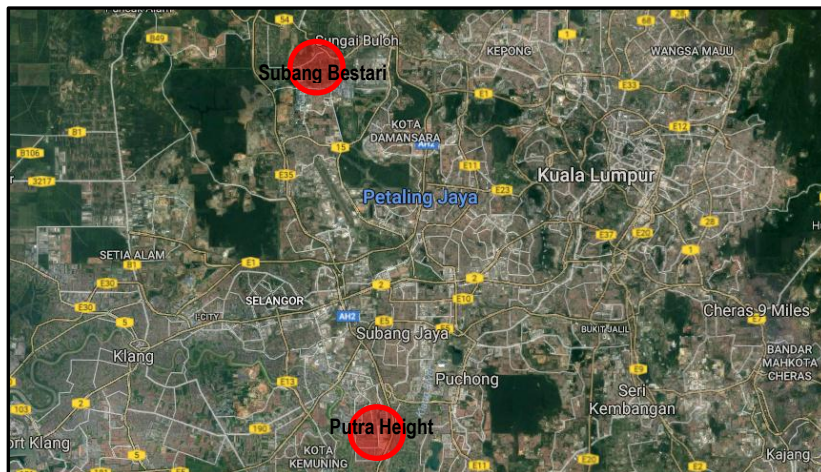

Figure 1: Subang Bestari and Putra Height as selected case study. .

3.2 Data Collection

This research had employed the quantitative method based on the housing affordability survey. The limitation of the research is that the use of structured interview approach using questionnaire form due to the sensitivity of the respondent's financial information. Randomly 142 respondents were interviewed and selected within the research areas whereby 61 respondents were from Subang Bestari and the rest 81 respondents from Putra Height. The selected respondents are the low-income group. The structure of the questions was divided into three main variables involving location housing affordability, which were housing household, housing and transportation expenditure. Finally, the measurement of location housing affordability was made to identify the quality of life-based on the housing affordability among the low-income group in the residential neighbourhoods of that urban area.

3.3 Household income, housing & transportation expenditure

In this research, household income for the low-income group in an urban area range is less than RM3,860 also known as B40 (11th Malaysia Plan, 2015). The median value was exercised to measure the household income rather than mean value because the median value eludes the skewing of data by outlier (see Table 1). For housing expenditure, the monthly mortgage payment and monthly amount of utility bills such as telephone, electricity, water, the internet and others represent the variables.

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Transportation expenditure divided into three variables which studied the vehicle ownership, vehicle usage and public transit. Vehicle ownership determined by the number of the vehicle, monthly payment of vehicle, the annual amount of insurance and tax. Vehicle usage based on the average annual kilometer travel in Selangor which is 28,576km together with the distance of the respondents travelling to work (Shabadin et al., 2014).

The price of fuel based on average fuel price of RON95 started from 27 April 2017 to 31 May 2017 which is RM 2.11 This, therefore allowed calculation of the amount of fuel used. Apart from that, vehicle usage was also based on the monthly amount of toll and parking fees together with vehicle repair cost and maintenance. Public transit will be the total amount of monthly expenses on public transport as the main transportation. Adding up all the variables will then give the mean transportation expenditure.

Table 1: Elements and variables of location housing affordability

Measure	Variables
Median household income	Total household income
Mean housing expenditure	Monthly mortgage payment + total utilities payment
Mean transportation expenditure	Vehicle ownership + vehicle usage + public transit

The method to compute a simplified location housing affordability as refer to Haas et al. (2016) is as per equation below:

$$LHA: \frac{mHi - (\mu He + \mu Tc)}{mHi}$$

LHA is Location Housing Affordability. Where *mHi* is the median of household income, *µHe* is the mean housing expenditure for the household, *µTc* is the transportation expenditure. The equation to compute for *µHe* and *µTc* is as per below:

$$\mu He : Mp + Ub$$
$$\mu Tc: Vo + Vu + Pt$$

Where *Mp* is the monthly mortgage payment, *Ub* is the total monthly amount of utility bills, *Vo* is the vehicle ownership, *Vu* is the vehicle usage, and *Pt* is the public transit. Affordability categories based on the result of the location housing affordability index as shown in Table 2.

Table 2: Affordability categories

Rating	LHA Result
Affordable	> 0.55
Moderate unaffordable	0.54 – 0.40
Seriously unaffordable	0.39 – 0.25
Severely unaffordable	< 0.24

(Source: Litman, T. 2014).

4.0 Findings and Discussions

The data analysis was divided into three part based on the two low-income groups (B40) from two residential areas (Subang Bestari and Putra Height) and added both residential areas to become an overall total representing the low household's income in an urban area. The median household income for the residential areas was RM3,201 for Subang Bestari, and RM2,502 for Putra Height together with the median household income of total of respondents of RM2,852 which is still in the range of B40. This demonstrated that there are still low-income groups in an urban area in one of the developed state in Malaysia.

Transportation expenditure does influence housing affordability (Table 3). Based on the location housing affordability index, the result indicated that the transportation expenditure for overall respondents was RM1,329 which stood as 46 percent of overall median household income, nearly half of the household income. The findings, therefore, confirms previous research by Jewkes & Delgadillo (2010) which claimed that the low-income group would spend half of their total income on transportation expenditure.

However, none of the respondents utilised the public transit as their main transportation. This was expected in Subang Bertari since there is no connectivity of public transit compared to Putra Height, which has the connectivity of two LRT lines. The LRT station built after Putra Height is known as a prominent residential area not as Transit Oriented Development (TOD). Most of the residents used their vehicle for mobility hence resulting high transportation expenditure on vehicle usage and ownership. The respondents did mention that the public transit is an alternative mode of transport if there are unexpected circumstances when they have problems with their transport. Therefore the public transit is considered as an alternative transport, not as the main transportation for mobility.

In term of value, Subang Bestari has slightly higher mean household expenditure (RM 732) and mean transportation expenditure (RM 1,432) than Putra Height (mean household expenditure RM 516 and mean transportation expenditure RM 1,226). This is because Putra Height has better accessibility and nearer to the city centre in comparison with Subang Bestari. In term of household income, the residents of Subang Bestari have slightly more and have the ability to spend more in term of higher utility bills (RM 92) contrast with the residents of Putra Height (RM 86).

The result of location housing affordability for Subang Bestari is 0.32, and Putra Height is 0.30. A different of 0.02 between both of the residential areas are still seriously considered as an unaffordable state. This revealed that a residential area with public transit is the same as a residential area without the public transit in term of housing affordability. The overall location housing affordability result is 0.31, and this explains a recent research, that urban area is seriously unaffordable (Khazanah Research Institute, 2015).

The low household's income in the urban area is having difficulty concerning housing affordability. It will have an influence on low household's income ability for to live with the rapidly increasing living cost in the urban area. Moreover, it will definitely have an impact toward the low-income's quality of life.

Table 3: Location affordability result for low-income group in Putra Height and Subang Bestari

Measure	Variables	Subang Bestari	Putra Height	Overall Respondents
Median household income (RM)	Respondent Salary	1,441	1,331	1,386
	Spouse's Salary	1,760	1,171	1,446
	Total	3,201	2,502	2,852
Mean household expenditure (RM)	Monthly Payment	640	430	535
	Utility Bills	92	86	89
	Total	732	516	624
Mean transportation expenditure (RM)	Vehicles Ownership	537	393	465
	Vehicles Usage	895	833	864
	Public Transit	0	0	0
	Total	1,432	1,226	1,329
LHA Result		0.32	0.30	0.31

5.0 Conclusion & Recommendation

Location housing affordability in this research had shown that low households income in an urban area is seriously unaffordable and at the same time demonstrated that location does influence housing affordability. Therefore the outlying urban areas are becoming seriously unaffordable especially for the low-income group. The outcome of the findings suggests that location housing affordability is associated with the quality of life. The policies aiming at the provision of low-cost and affordable housing for a quality of life are irrelevant if the people have high housing expenditure.

Location Housing Affordability Index is the proposed indicator for quality of life assessment because the measurement is inclusive of transportation expenditure which is very relevant especially to determine the location as affordability. Housing affordability can impend the households' physical well-being and economic security, and the importance of transportation elements should have been in the mindfulness of the policy makers regarding the quality of life in term of locality of affordable housing. Providing affordable housing especially for low household income within urban area that have good accessibility and connectivity within an employment centre will help their quality of life and in the same time have better indication of Location Housing Affordability.

Moreover, the term "location" should be part of the definition of affordable housing because it have influence toward the household expenditure and in the same time Location Housing Affordability as indicator that needs to be measured as part of the quality of life in Malaysia. It is recommended that further studies should be carried out on location housing affordability with other types of socio-demographic such as medium-income group, youth civil servant, and elderly where it can have more understanding on the issue of housing affordability in Malaysia.

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