

## **The Hurdle Delivering Affordable Housing: Experienced from Pr1ma Project**

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**Abstract:** Affordable housing is a program that introduced by the government to improve housing affordability which ensure every income earner group could afford houses, especially for low-income households. Affordable sustainable housing project has no clear definition so far but the concept of needs, which seeks to ensure that the essential needs of the poor are adequately met; and the need for addressing every limitation arising from the use of technology and activities of social elements affecting the environment's ability to meet the present and future needs, may to consider to define as general idea. This paper its to discuss the barrier factor on delivering affordable housing project. By using the latest 10 years of publication for extensive literature review methodology and a questionnaire generated from the literature review further sending to 50 respondents who experienced PR1MA project which this perhaps may contribute in enhancing the existing knowledge.

**Keywords:** definition of affordable housing, affordable housing, criteria of affordable housing

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## **1. Introduction**

There are different types of housing offered in the market but not all of them are affordable by everyone. Researchers had defined affordability in general as the relationship between household expenditure and income earned. However, there are argument saying that affordability is not only influenced by that, but also by the levels and distribution of house process, structure of financing cost, housing availability, employment, maintenance of the existing affordable housing stock and patterns of new construction (Nor Hanizan Sahib, 2015; Wilcox, 2003; Ludwig et al, 2002; Bramley, 1994).

Affordable housing is a program that introduced by the government to improve housing affordability which ensure every income earner group could afford houses, especially for low-income households (Xiaolong Gan et al, 2017; M.S. Suhaida et al, 2011; Azevedo et al, 2010). According to Nor Hanizan Sahib (2015), houses which having housing loans exceeding 30percent of monthly gross household income will not be counted as affordable housing as it will affect other basic needs of the owner. Other than the financial affordability, the location, quality and build-up of a house should be sufficient in order to entitled affordable housing (Cheah Su Ling et al, 2017).

Malaysia government had implemented several affordable housing programme such as Program Bantuan Rumah (PBR) and Perumahan Rakyat 1Malaysia (PR1MA) for low- and middle- income households to cope with the problem of mismatch between supply and demand of housing due to socioeconomic change, urbanization and evolving population structures (Nor Baizura Jamaluddin et al, 2016). However according to Cheah Su Ling (2017) Malaysia still facing shortage of affordable homes for the masses. Hence, it is important to have more affordable housing constructed in Malaysia.

## **2. Affordable housing**

A house is a home, building or structure that functions as a habitat for humans or other creatures. The term house includes many kinds of dwellings ranging from rudimentary huts of nomadic tribes to complex structures composed of many systems. Apart from affordable, the aspect of comfortable in is also important. According to Hamidah Ramlan et al. (2016), the definition on affordable housing is generally involved in the ability of a household to get the housing services, while specifically it involves the correlation between household income and the price or payment. Largely, the Malaysia's accommodation procedure has a principal of aim of realizing all nations, mainly the low-income group (LIG), are definite admission satisfactory and unrestricted admission to a reasonable accommodation requirement. According to Hamidah Ramlan et al. (2016), it is hoped that they seek out the country for a feasible and sustainable being settlement can be achieved throughout a suitable and well deliberate accommodation condition.

The Brundtland report defines SD as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (United Nations, 1987). The two key common concepts contain in the above two SD definitions are: the concept of needs, which seeks to ensure that the essential needs of the poor are adequately met; and the need for addressing every limitation arising from the use of technology and activities of social elements affecting the environment's ability to meet the present and future needs.

Based on the aforementioned two concepts, which are affordable and sustainable housing, it should adequately meet housing needs of the vulnerable households on a continuous basis, and at the same time consider the environmental limitations while meeting such needs both in the present and future in relation to the affordable techniques and sustainable components (Akanbi Olusayo Oyebanji et al., 2017). However, sustainability issues are bound to arise where appropriate measures are not adequately and properly linked together in affordable housing delivery. Therefore, clearance on defining affordable sustainable housing project truly much appreciated to make

these two concept well deliver to the public as well as to the construction players the parties who deliver these concepts.

Previous authors state that houses will be consider affordable only when the financing of home ownership which included utilities fee, maintenance fee, taxes and insurance is less than 30% of the monthly gross household income. When the amount of house cost more than 30%, the house will not be considered as affordable housing as it will affect the other 70% of income which initially being allocate for the use of basic needs such as food, clothing, vehicles, medical financing, education, cultural needs, and even leisure time and entertainment (Nor Hanizan Sahib, 2015; B Bakhtyar et al, 2013; Barclay, E. and Betker, D, 2004; Anderson, M.L., et al, 2003).

However, some author mentions that affordable housing is the relationship between housing and people. According to Wallbaum H, et al (2011), a range between 15 to 30 years will be given for client to obtain affordable houses. The affordability is depends on the ability and desire of client to own or buy houses. For certain client, all house is consider affordable for them; however for certain client, no housing is affordable unless it is free (Adel El Menshawy et al, 2016; A.M.J. Esruq-Labin, 2014; Abed, 2012; Yang, Z, and Shen, Y, 2008; Stoned, 2006, p.153).

According to Cheah Su Ling (2017), other than financial affordability, affordable housing is houses that sufficient in quality and location. Affordable housing is also a concept, which use to explain socioeconomic and development environments. It was aim to make sure that every income-earner cluster could afford the houses provided (A.M.J.Esruq-Labin, 2014). **Table 1** summarizes the definition of Affordable Housing cited from previous researches.

**Table 1.** Definition of affordable housing from previous authors

No.	Definition	Author, Year
1	Affordable housing is defined as housing which is sufficient in quality and location, and is not so costly that it prevents its occupants from satisfying other basic living needs.	Cheah Su Ling, 2017

2	Affordable housing can be defined as "it is a relationship between housing and people. For some people, all housing is affordable, no matter how expensive it is; for others, no housing is affordable unless it is free"	Adel El Menshawy et al, 2016; Abed, 2012; Stoned, 2006, P.153
3	Affordable housing also meant as the financing of home ownership does not exceed 30 percent of monthly gross household income.	Nor Hanizan Sahid, 2015
4	Affordable housing is a concept which is used to explain socioeconomic and development environments, which aims to confirm if housing provided for families can be afforded by each income-earner cluster, that is, low, middle, or high income-earner cluster.	A.M.J.Esruq-Labin, 2014
5	Affordable housing is a feature of housing facilities which is related to customer ability and the desire to own or buy houses	A.M.J.Esruq-Labin, 2014; Yang, Z, and Shen, Y, 2008
6	The housing costs that consume less than 30% of a household's budget is an affordable house	B Bakhtyar,2013 ;HUD, U.S. Department of Housing and Urban Development, 2008
7	Affordable housing can be defined as a house that a family group can acquire within a given period, which generally ranges from 15 to 30 years	Wallbaum H, Ostermeyer Y. Salzer C and Escamilla E Z, 2011.

### 3. The barrier factors of affordable housing

Land is one of the most frustrating factors in delivering affordable housing project as it represents the significant proportion of the total cost of the project in order to make the housing development a sustainable affordable development project. The development of affordable housing is very scarce as

the supply of land is very limited and there are many other facilities to be provided to make ease of daily routines of people to complete their daily needs. it makes it more difficult for the government to lease out lands to developer for affordable housing schemes because of the sub-urban lifestyle which changes from time to time following the utmost technology to serve the people (Tan, T. H et al, 2013). Besides land supply the cost of land to be obtained to accordance of providing affordable housing scheme is high which effect the value of the house where the location, services and amenities, public transport, health facilities are being the utmost factor which affects the price of the houses.

Affordable housing is defined as being able to buy the property and consumption. Affordable housing schemes exists to make good quality housing affordable for everyone, and this is ultimately why governments (local, state and federal) are involved in the housing system. There is a gap between the sale price of housing and the actual cost of building housing which mostly were to be sold at the construction cost (Tan, T. H et al, 2013). The key which refers the pricing of the property would change dramatically within a certain period of time because of the community which are proximity to a good school, jobs, amenities, parks and also open spaces which leads to a urban lifestyle which is preferred by most of the youngsters.

As a result, making housing affordable is a concern for inner-city residents who live near plentiful city jobs. This diversity requires cities and regions to take a hard look at their social and economic structure in order to respond sensibly to their unique situations. The disparity between urban residents in need of employment and suburban employers in need of employees can be bridged in two ways by helping people get to and from their jobs and helping them get closer to where they live. Besides an improvement on transportation to their workplace or way back home should be essential to connect both urban and sub-urban residents areas so that it would be another helpful deed and supportive on the land segregation and helping the value of affordable housing (Tan, T. H et al, 2013).

Although machineries, equipment labour are the main component of the construction cost, it is believed that materials used is construction are the most

key player in regulating the cost of the building and plays a huge role in construction sector to predict the cost of the completed building. According to Tan, T. H. et al., (2013), Materials are meant as in raw materials such as cement, sand, steel, reinforced steel, aggregate and also many other materials which are involved in construction industry are being very prone to be into situations where the price of those materials infatuate defer to time. The rate of materials are being hard to described which make the end off product being expensive and unaffordable for buyers.

The problem of housing and growing urban population, especially the poor, is becoming more and more important in urban areas where the rapid increase of urban population due to high population growth and significant rural-urban migration has exacerbated the housing situation. Land availability hits the barrier of developing affordable houses are land supply. Developers are delivering on the housing capital market and demanding serviced land from the government. Any factor that increases the supply of serviced land will also increase the supply of housing capital and eventually decrease the prices of housing. According to Tan, T. H. et al., (2013), there seems to be a connection between the supply of land and the price of housing. Foremost, planning makes the entire context less uncertain in which development takes place. Uncertainty over future property prices makes the decision to develop the land relatively less attractive at the present time. Land use planning significantly reduces the degree of uncertainty about both the shape and level of development that will be appropriate and acceptable. According to Tan, T. H. et al., (2013), expressed that reducing demand and reducing the price of land for development are the most sustainable way to develop affordable housing.

Besides that, Susilawati (2015), digested the fact that the allocation and implementation of infra work cost should be cost efficient where it is related between the housing energy and water efficiency where the housing size and housing sustainability be more considerate to achieve the sustainable affordable housing. It becomes a barrier in developing affordable housing by the developer if they have no other resources or skills to kill the barrier and lead the development to an affordable housing development. This differ to the

Lack of Strategic Infrastructure Development of the developer which affects the rate of the purchasing of home.

Land use planning should also play a major role in affecting the land availability where most of the land are not being used appropriately and the infrastructures are bad. Bad infrastructures of land may affect drastically in land availability as the government would be unable to provide land for affordable housing development. The increased demand on housing which most probably the cause of over population is being affected. Thus, from table 2.3, land availability and land prices are being the most supported barriers from most of the researches which is literally true. Undeniable fact that the demographic statistic shows that there are almost 32.63 million population in the third quarter 2019 according to the Department of Statistics Malaysia, Official Portal which could be narrowed as over population as well where it effects on providing land for a low rate by the government. According to Fatimah Yusof (2012), land on its use should be adequately used so that the planning control system would be efficient to provide more land for affordable housing developments. Table 2 below summarize a numbers of barriers factors that are tangles into the development of Affordable Housing.

Lastly, Certain land use controls have an effect on housing available at prices that are affordable to the average person or increase shelter costs without compensating for public purposes, resulting in large-scale zoning practices which affects the development regulation. At some phases minimum lot sizes are encouraging a larger and more expensive home which in some development the regulation has raised the cost of new development to 35% which would affect the affordable housing schemes. The rents are ranting up to 17% because of the development of the areas where it should be controlled so that developers and the government could vent up more affordable housing schemes for the consumers (Tan, T. H et al, 2013

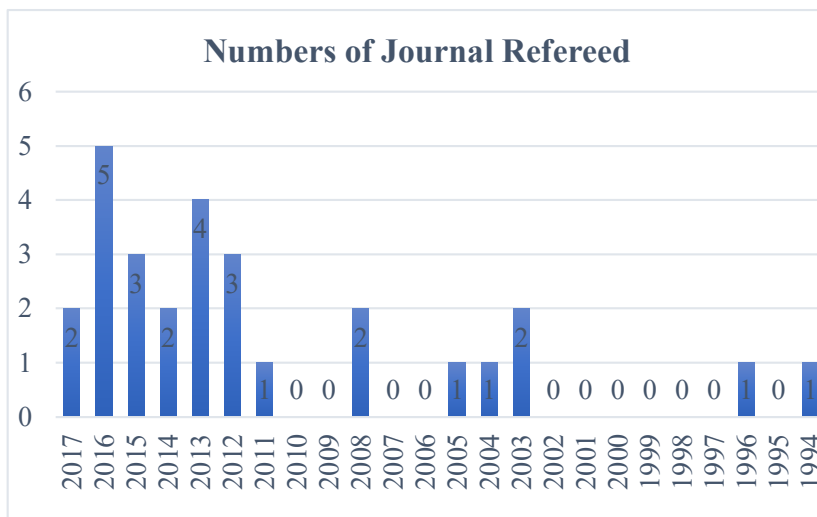


**Table 2.** Barriers that are tangles the development of affordable housing

N o.	Barriers	Authors							Total Referred
		Tan, T. H. (2013)	Manturuk, K. R. (2012)	McCabe, B. J. (2013)	Thompson-Robinson, M.	White, M. J. (2012)	Finnigan, R. (2014)	Walsh, R. (2015)	
1	Land Price	/	/	/	/	/	/	/	5
2	Effect on Economic Downturn	/			/	/			3
3	Land Availability	/	/	/			/	/	5
4	Increasing House Prices	/			/	/		/	4
5	Lack of Private Finances	/	/		/	/	/		5
6	Failure to Bring Land Allocated to Market		/		/	/	/		4
7	Lack of Strategic Infrastructure development	/				/		/	3
8	Local Resident Opposition		/						1
9	Political opposition to new development		/			/	/	/	4
10	Conflicts with Other Policies		/						1
11	Effects of Second-Home Ownership	/	/		/	/	/	/	6
12	Availability of Developers (Private)			/		/			2
13	Development Control Practices	/	/	/		/		/	5
14	Lack of Co-ordination of Planning				/		/	/	3
15	Lack of Strategic Infrastructure Development	/		/	/	/	/		5
16	Restrictive Planning Policies	/	/		/	/	/	/	6
17	Lack of Detailed Knowledge Amongst Officer	/	/		/	/	/	/	6
18	Attitudes of Developer	/					/		2
19	Problem with Acceptable Cost Guidance		/		/		/	/	4
20	Construction Material Cost	/					/	/	3

#### 4. Analysis and findings

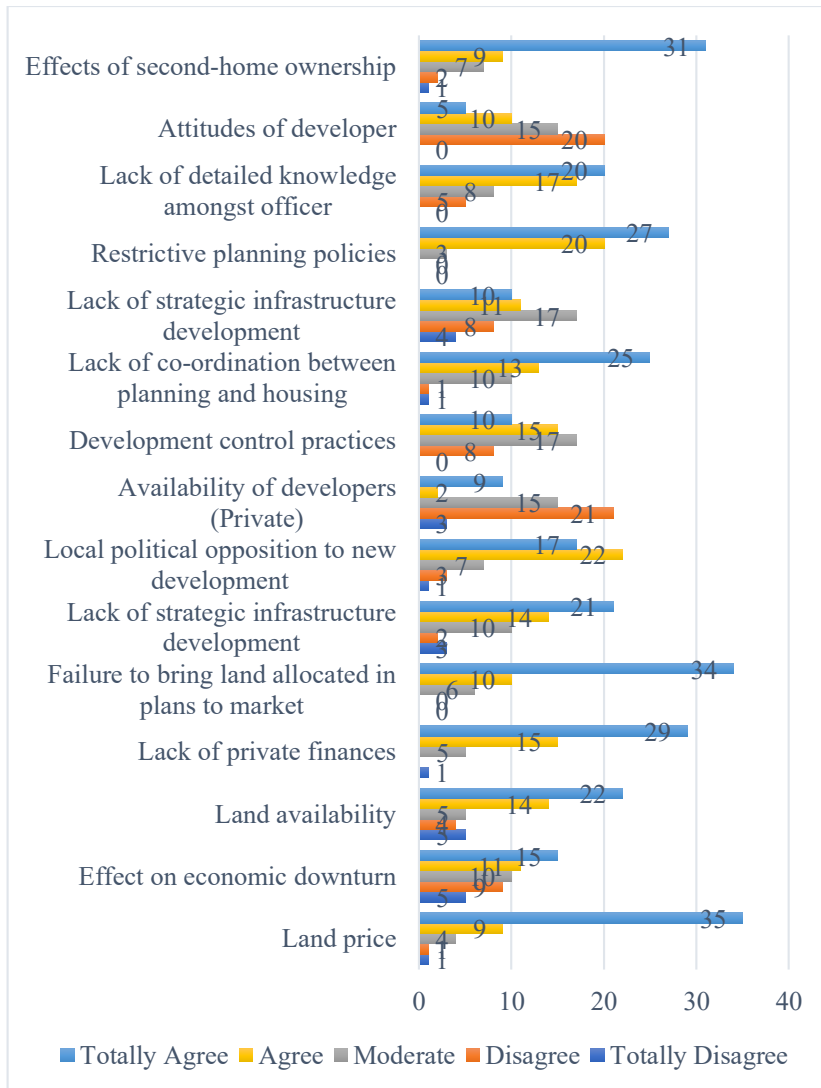
Figure 1 show the different year of source referred. 28 journals had been used as references while producing this paper.



**Figure1.** Journal referred

50 structured questionnaires been send to 50 respondents who having experienced dealing with PR1MA project as this project fall in affordable housing type of project.

According to the questionnaires provided, the reading of the questionnaire has been concluded into **Figure. 2** and thus resulting the results of barriers that are involved in delivering affordable housing. The level of agreement in the table below shows that the land price of the current economics are being the barrier for contractors to get involved in developing affordable housing projects.



**Figure 2.** Barriers in delivering affordable housing

## 5. Conclusion

Affordable housing is prior to the land availability supply of the country. Thus, the government should have more initiative in providing land to useful development and relay the outside investors to develop their development in an adequate location not in the strategic areas of potential development for affordable housing.

Financial support differs allot to the development of affordable housing development. Thus, the government should encourage not only local investors but also encourage outside investors to invest on affordable housing by tightening the legal procedures on investing on other development. By initiating this method, most of the investors would voluntarily invest on affordable housing development.

Government should also keep track on ongoing projects to make sure the quality of the affordable housing development is up to standards and quality meets a regulation. Therefore, setting up a total new set of condition for affordable housing development. For instance, most of the development of affordable housing are near to High Tension Cable which could affect the health of homeowners whom are living for a long time. The government should adequate living qualities as well.

Developers should come up with more innovative design that could cut down construction cost rather than depending wholly on contribution of the government. Implications of new innovation to construction industry will emphasize not only on cost reduction but also hike up the potential of quality development and reducing time of construction.

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### **References**

- Abed, A. (2012). The impact of sustainable neighborhood development on housing affordability: a systematic analysis of affordable leed and towards framing architectural and planning guidelines for affordable sustainable neighborhoods. *Texas: proquest llc 2013*
- Adel El Menshawy, Sherine Shafik, Fadwa khedr (2016). Affordable Housing as a Method for Informal Settlements Sustainable Upgrading, *Procedia – Social and Behavioral Sciences 223 (2016) 126 – 133*

- Akadiri, P. O., Chinyio, E. A., & Olomolaiye, P. O. (2012). Design of a sustainable building: A conceptual framework for implementing sustainability in the building sector. *Buildings*, 2, 126-152.
- Akanbi Olusayo Oyebanji, Champika Liyanage, Akintola Akintoye (2017), Critical Success Factors (CSFs) for achieving sustainable social housing (SSH), *International Journal of Sustainable Built Environment* (2017) 6, 216–227
- A.M.J.Esruq-Labin, A.I. Che-Ani, N.M. Tawil, M.N.M Nawi, M.A.Othuman Mydin (2014). Criteria for Affordable Housing Performance Measurement: A Review. *E3S Web of Conferences* 3, 01003 (2014)
- Anderson, M.L., Charles, St. J., and Fullioy, T.M. (2003). Providing affordable family housing and reducing residential segregation by income: A systematic review. *American Journal of Preventive Medicine*, 24(3), 27-67
- Barclay, E. and Batker, D. (2004). Smart growth development: An analysis of 10 common myths about development. *Asia pacific environmental exchange*, September.
- B Bakhtyar, A Zaharim, K Sopian, O Saadatian, J Abdulateef (2013), Affordable Quality Housing for Urban Low Income Earners in Malaysia. *Advances in Environmental Science and Sustainability*, 60 -73
- Bramley, G. (1994). An Affordability Crisis in British Housing: Dimension, Cause and Policy Impact. *Housing Studies*, 9(1), 103-124
- Chau Sim Yee, Mohd Hilmi Izwan Abd Rahim, Sulzakimin Hj Mohamed (2015). An Insight of sustainable housing in Malaysia.
- Cheah. S. L, Almeida. S.J & Ho S.W (2017). Affordable housing: Challenges and the way forward. *Quarterly Bulletin*, 19 – 26
- H. Wallbaum, Y. Ostermeyer, C. Salzer, E. Zea Escamilla (2011). Indicator based sustainability assessment tool for affordable housing construction technologies, *Ecological Indicators* 18 (2012) 353 – 364
- Hamidah Ramlan and Eleeza Eleena Zahari (2016), Review the Issue Of Housing among Urban Dwellers in Malaysia with Special Reference

- towards Affordability to Home Ownership, *Procedia Economics and Finance* 35 (2016) 216 – 223
- Nor Baizura Jamaluddin, Yusfida. A.A, & Hazlina. H (2016). Encapsulating the delivery of affordable housing: An overview of Malaysian practice. *MATEC Web of Conferences* 66, 00047 (2016)
- Nor Kalsum Mohd Isa, Zulkiflee Abdul Samad and Anuar Alias (2014). A Review on Sustainability Principles of Building: Formulation of a Theoretical Framework, *Journal pf Surveying, Construction and Property (JSCP) Volume 5, Issue 1 (2014)*
- HUD, U.S. Department of Housing and Urban Development (2008). Affordable Housing:whoneeds?Retrievedfrom <http://www.hud.gov/offices/cpd/affordablehousing/>
- Mohd Wira Mohd Shafiei, Milad Samari, Nariman Ghodrati (2013). Strategic Approach to Green Home Development in Malaysia- the Perspective of Potential Green Home Buyers, *Life Science Journal* 2013; 10 (1)
- M. Keiner, (2005). LinkHistory, definition(s) and models of sustainable development [Elektronische Daten] ETH e-Collection.
- Radzi Ismail, Mohd Wira Mohd Shafiei, Ilias Said and Fazldiel Aswad Ibrahim (2013). Green Homes Development Practices and House Buyers' Requirements: A Review, *Australian Journal of Basic and Applied Sciences*, 7(13) November 2013, Pages: 7-15
- Salem Ang, AbdulLateef Olanrewaju, Fah Choy Chia, and Yeow Seong Tan (2016). Awareness on Sustainable Affordable Housing Among Homebuyers in Malaysia, *MATEC Web of Conferences* 103, 03014 (2017)
- Somayeh roshanfekr, N.M.Tawil and N.A.Goh (2016). Investigation of Sustainable Housing Criteria. *MATEC Web of Conferences* 66, 00096 (2016)
- Sahib, N, H (2015). The types of affordable housing based on income in the Klang Valley: case study. *81 IPBJ Vol.7 (1)*, 81 – 95
- Tan, T. H. (2013), "Assessing Green Home Performance: Case Study of Iskandar, Malaysia", Proceeding for Asia Pacific Network for Housing

Research (APNHR) Conference 2013, Global Housing Dilemmas: The Ways Forward, Jointly organized by University of Malaya and University of Hong Kong.

UN-Habitat, (2012). United Nations Human Settlements Programme.

"Sustainable Housing for Sustainable Cities ." a policy framework for developing countries. (2012)

Wilcox, S., (2003). Can work, Can't buy. York: Joseph Rowntree Foundation.

Yang, Z., and Shen, Y. (2008). The affordability of owner occupied housing in Beijing. *Journal of Housing and the Built Environment*, 23 (4), 317-335.

Zeithaml, V. A., Berry, L. L. and Parasuraman, A. (1996b). The behavioral consequences of service quality. *Journal of marketing*, 60(2).

Zhang, Y. (2015). The Impact of Brand Image on Consumer Behavior: A Literature Review. *Open Journal of Business and Management*, 3(01), 58.