

See discussions, stats, and author profiles for this publication at: <https://www.researchgate.net/publication/350983251>

Affordable Housing For the Middle-Income Group in Malaysia

Article in IOP Conference Series Earth and Environmental Science · March 2021

DOI: 10.1088/1755-1315/685/1/012019

CITATION

1

READS

1,367

5 authors, including:



Yusfida Ayu Abdullah
Universiti Teknologi MARA

72 PUBLICATIONS 149 CITATIONS

[SEE PROFILE](#)



Nor baizura Jamaluddin
Universiti Teknologi MARA

6 PUBLICATIONS 9 CITATIONS

[SEE PROFILE](#)



Hamizah Yakob
Universiti Teknologi MARA Puncak Alam

22 PUBLICATIONS 70 CITATIONS

[SEE PROFILE](#)



Marlyana Azyyati Marzuki
Universiti Teknologi MARA

79 PUBLICATIONS 261 CITATIONS

[SEE PROFILE](#)

Some of the authors of this publication are also working on these related projects:



Affordable Housing [View project](#)



Urban Planning, Happiness and Well-being [View project](#)

PAPER • OPEN ACCESS

Affordable Housing For the Middle-Income Group in Malaysia

To cite this article: Yusfida Ayu Abdullah *et al* 2021 *IOP Conf. Ser.: Earth Environ. Sci.* **685** 012019

View the [article online](#) for updates and enhancements.



240th ECS Meeting ORLANDO, FL

Orange County Convention Center Oct 10-14, 2021



Abstract submission due: April 9

SUBMIT NOW

Affordable Housing For the Middle-Income Group in Malaysia

**Yusfida Ayu Abdullah^{1*}, Nor Baizura Jamaluddin², Hamizah Yakob³,
Marlyana Azyyati Marzuki⁴, Zulkifli Ahmad Zaki⁵**

^{1,2,3,4,5}Faculty of Architecture, Planning and Surveying, Universiti Teknologi MARA (UiTM) Cawangan Selangor, Kampus Puncak Alam, Bandar Puncak Alam, Selangor, Malaysia

*Corresponding author: [*yusfida@uitm.edu.my](mailto:yusfida@uitm.edu.my)

Abstract. One of the most fundamental human needs is a house. While urbanization occurs tremendously in the cities of Malaysia, the middle-income groups living in the urban areas are facing greater challenges in house ownership. The middle-income households continuously experience issues of affordability, access to finance and availability. This paper presents a study on the delivery system of affordable housing. In this study, an assessment of affordable housing delivery system was conducted by examining the urban middle-income group in relation to the process of affordable housing provision. The study therefore aims at examining the current affordable housing policies and delivery system, with the focus on the middle-income group, which concentrates on assessing house buyers' experience and perception in relation to the practice of providing affordable housing for the middle-income. Using a mixed-method approach, the study employs a quantitative and a qualitative technique in conducting the study. A case study approach was exercised by means of investigating the PR1MA Corporation and SPNB as case studies. Results demonstrated that there are many constraints in the delivery system from the qualitative analysis and the respondents' perspective. The experience by the house buyers can be useful for authorities and other providers in the future development.

1. Introduction

Over the years, a house has been perceived, as a shelter therefore becomes a fundamental human need. Urbanization process brings benefits into housing development due to migration of people into major cities. However, urbanization too, has led to urban sprawl, increased demands for housing and rise in living cost, and the Klang Valley in Malaysia has no exception. House ownership can influence socio-economic, political and social well-being of the public [1][2]. However, despite the abundance of housing programs and delivery, issues regarding housing provisions and affordability in Malaysia remain as the country's major concern. This is due to issues including high prices of housing, difficulty in gaining access to finance and ownership and fluctuation in prices, which are often not synchronized with income, affordability and availability [3][4]. The most crucial problem is the affordability and inaccessibility of urban community in possessing a house [5], the increasing demand for low and medium cost house, location and distribution of the affordable house. Affordable housing development has then become an important agenda of the country [6].

In the past, before the government provides with various housing programs and schemes to accommodate the under privileged group, house ownership was a great challenge to the lower-income group. They suffered due to high house price, financial availability and many other issues which. The



Content from this work may be used under the terms of the [Creative Commons Attribution 3.0 licence](https://creativecommons.org/licenses/by/3.0/). Any further distribution of this work must maintain attribution to the author(s) and the title of the work, journal citation and DOI.

government through its numerous affordable housing schemes then encountered these issues. However, this dilemma had not ended. Nowadays, trying to own a house has known to be a threat among the middle-income group [3]. Affordability is seen as a hindrance to house ownership [2][3][7][8][9][10][11][12]. The Institute of Strategic and International Studies (ISIS) Malaysia in 2013 reported an increase of prices in the property market, while [7] claimed that houses in Malaysia are too expensive and beyond citizens' affordability. Part of the issues include obtaining housing loans and access to mortgage [11][13][14].

Other pressing difficulty includes the issue of adequacy even though there are abundance of housing delivery but with insufficient or imbalanced of housing provisions [5]. The existing supply-side and tax incentives in constructing affordable housing are inadequate. Not only the demands for affordable housing increases, but also the demand and supply gap of affordable housing still exist [15]. Private developers are not keen in building low-medium cost housing due to less profit [16]. Moreover, there is no steady supply of affordable houses for the low and middle-income groups [17].

In addition, besides availability and affordability, the key constraint to affordable housing process is the system comprises of plan preparation, planning, programs and implementation or delivery [18]. There is tendency of administrative challenges due to the practice of the 3-tiers government in Malaysia [18]. There appeared to be inconsistency of policies and local implementation affecting housing developers [5]. Hence, limitations happen in the housing delivery system [15].

The study also discovered that there is no clear definition of affordable housing because various agencies grasp their own definitions and interpretations of the terminology in relation to their products [12][19]. There was inconsistency of definitions among different States in Malaysia thus requires an enforcement in policies [5]. In fact, the current affordable housing policies needs revision, to address the issues of price, programs, loan assistance, quality and delivery process [11].

Hence, these conditions required the government to place this group as part of the national's affairs along with the lower-income group. Moreover, the present 11th Malaysia Plan marks the government's persistent effort in trying to provide adequate and quality affordable housing, which covers the poor, low and middle-income groups. The 11th Malaysia Plan is envisioned to continue the 10th Malaysia Plan in promoting access to affordable and quality housing for all levels of income. Through the 11th Malaysia Plan, government strives to increase access to affordable house according to target groups, strengthen planning and its implementation and at the same time enhance liveable housing area [15].

In Malaysia, the Ministry of Housing and Local Development (formerly known as the Ministry of Urban Well-Being, Housing and Local Government) is accountable in regulating the provision of housing development. A specific department under this ministry called the National Housing Department (NHD) carries the responsibility of ensuring the housing policies can be transpired [20]. Generally, in Malaysia, affordable houses are homes that are specially built for the targeted group and sold at lower prices to ensure the houses are accessible and affordable [21]. It is expected that the public still purchase the houses although the current housing prices is considerably expensive.

Based on those initial discoveries, the study therefore aims at examining the current affordable housing delivery system, with the focus on the middle-income group. The focus is to assess the house buyers' perception in relation to the current application of housing policies and the practice of providing affordable housing for the middle-income. In short, the concentration mainly focuses on the delivery process of affordable housing from the buyers' perspective.

Generally, affordable housings are developed for the low and middle-income households. The government and private agencies build affordable housing with the concept of comfort and appropriate for the targeted groups' need, and 20% cheaper than the market price. However, the definitions may differ with reference to the selling price. The National Housing Department categorizes affordable housing as houses with the price below RM300,000 each. The PR1MA Corporation [22], being the main provider for affordable houses delineates affordable houses between the range of RM100,000 to RM400,000. And, Syarikat Perumahan Negara Berhad [23], also another provider, characterizes a price tag as low as RM35,000 to RM250,000 depending on the states. Meanwhile, the Selangor State of Government describes affordable houses between the range of RM85,000 to RM150,000 [24].

Meanwhile, the term housing 'delivery system' is part of the systems to fulfil and complete the delivery and development of houses to the buyers [25] or a system where various types of houses for

the people [26]. In addition, housing delivery system proposes that houses in the market comply with the standards and regulations, correspondingly undergo planning process and obtain planning approval from authorities [27].

The 'middle-income group' is classified as the M40 group, consisting of median household income of RM6,275 and above [28]. [29] and MA Hassan [12] describes the middle-class group are the middle-income group by standards of the developing world and their percentage of discretionary income equivalent to the developed status, not their income. In general, the overall income for this group is between RM2,000 to RM4,000, but the household income for those living in the capital may range from RM4,000 to RM6,000 [30]. Nevertheless, affordable housing providers like PR1MA and SPNB categorize this group earning from RM2,500 to RM10,000 per month. Khazanah [31] discovered that there are many disparities between states in terms of household income categories.

2. Methodology

In relation to this study's purpose, which intends to examine the current housing policies and delivery process, a quantitative instrument is required to evaluate house buyers' perception, and a qualitative approach is needed from the existing housing policies and documents. Hence, a *mixed method* as a research design was fitting for this study due to the combination of both qualitative and quantitative approaches. Moreover, Khoza & Khabir [32], in their similar study on housing delivery process had also acquired a mixed-method approach whereby qualitative method was employed to evaluate policies while quantitative method was applied to measure the variables for questionnaire survey.

To achieve the mixed-method research design, the study had adopted several strategies; a descriptive research strategy, a case study method and a questionnaire survey. In this work, a *Descriptive Research Approach* is applied as it deals greatly with policies and governmental documents and policies [33]. Through this approach, secondary data from policies and related documents were analyzed by examining the implementation of past and present policies. The technique concentrates on the descriptions and interpretations of past policies and evaluations of programs [33]. According to Shamsuri [34], a research design consists of practical research, experimental research, action research, phenomenological, descriptive and historical research. It sets out to seek accurate and adequate description of activities, objects, process and persons [34]. Additionally, a descriptive research method presents a picture of the specific detail of a situation, social setting, or relationship [35]. In fact, it is a detail investigation which defines the problem until a complete report is written [34]. Based on those lines of interpretations, since this work concentrates on housing policies and the current delivery practice and process of affordable housing provision, it is fair to select this strategy and categorize this work as a Descriptive Research Approach.

2.1. Determining the Case Study

A case study is categorized as one of the descriptive research strategies [36]. In many similar studies, previous researchers had also applied the same tactic [18][27]. Likewise, a case study method explores a program, event, activity, process, or individual(s) in an in-depth manner [34], which happens to be the case of this piece of work. In relation to that, and looking at the aim, this study had decided on using the case study method as a strategy. The study had, therefore, chose two case studies, using prime affordable housing providers; the *1Malaysia People Housing Program* (PR1MA) and *Syarikat Perumahan Negara Berhad* (SPNB). This was decided to examine the variances of delivery process between agencies.

The selection of case studies was made based on several factors; location in major urban areas, population projection and demands for affordable housing and significant of affordable housing program. Both PR1MA and SPNB affordable housing projects are concentrated in major urban areas; SPNB in Shah Alam, Selangor and PR1MA in the Federal Territory of Putrajaya (Figure 1). Shah Alam and Putrajaya were selected because most of developed areas in Malaysia and major cities are located within these two areas. Moreover, cities in Selangor and Putrajaya are known for important spots and demands for housing development. Moreover, the land and house price are higher, giving impacts to the middle-income group in terms of house ownership.

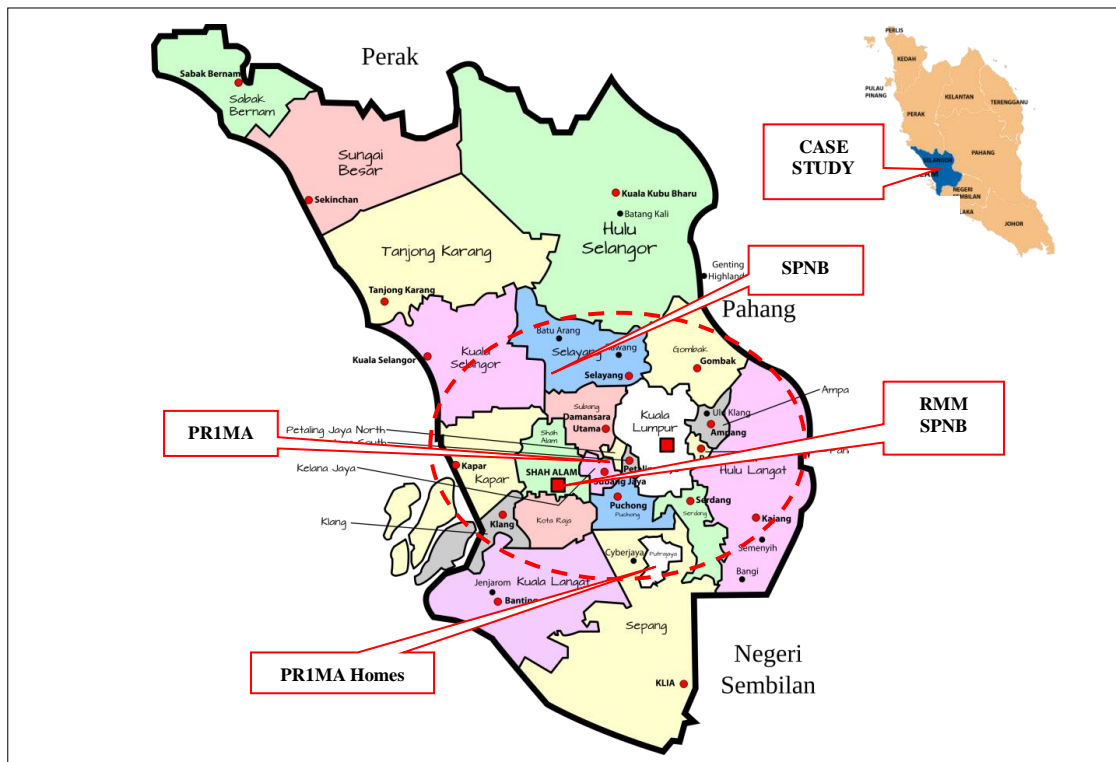


Figure 1. The Location of Selected Case Studies

Additionally, the new draft of Selangor Structure Plan 2035, projected that 83% of Klang Valley's population will be the citizens of Selangor. Cities like Shah Alam and Putrajaya in the Federal Territory will experience a continuation of urban population. As mentioned much earlier, urbanization and an increase in population number will result in issues like migration and give rise to housing demands.

Other justification relates to the significance of both SPNB and PR1MA operation, which offers and provides many affordable housings in the country. SPNB is known for its affordable housing for the low to middle-income groups. Currently, SPNB has launched its initiatives for the middle-income called "Rumah Aspirasi Rakyat" and "Rumah Idaman Rakyat", while PR1MA has its "1Malaysia People Housing Program" designated for the middle-income too.

2.2 Techniques of Data Collection

Data consisted of primary and secondary sources. In relation to this study aim, secondary data was obtained from books, articles, journals, research papers, government reports, policies and strategies, and other information related to the topic. Besides secondary data, the study had also carried out Structured Interviews and Questionnaire Survey. Structured Interviews were conducted with the two (2) main provider agencies; PR1MA and SPNB. While questionnaire survey was performed to examine the affordable house buyers' perception mainly from the PR1MA and SPNB projects. It seeks to enquire on the issues of affordability and provision of affordable housing for the middle-income group. For that reason, projects targeting the middle-income buyers were selected and the buyers were the samples. A 'drop-off questionnaire survey' approach was employed, as it allows the respondents to complete the survey at their convenient time, at home, within their own time [37].

2.3 Sampling Method

The questionnaire survey targeted the middle-income house-buyers as respondents. Two affordable housing projects were selected; (a) PR1MA Apartment Precinct 11, in Putrajaya, for PR1MA project; and (b) Alam Prima Apartment 24, in Shah Alam, for SPNB project. Respondents were selected through a careful stage of sampling. The first stage was to apply the *Stratified Random Sampling* method in

determining the total respondents/units of house required in each housing project (Table 1). The Stratified Random Sampling was applied to stratify by random selection of subjects from each stratum [37]. From there, a *Systematic Random Sampling* follows, to proportionately decide how and for which unit to distribute the questionnaire form (Figure 2).

Table 1. Sampling Frame

Total Units of Selected Affordable Housing Project

Affordable Housing	Total of Units
PRIMA Putarajaya	560
SPNB Alam Prima	435
Total	995

Formula:	N=Population, e= Error $n=N/(1+Ne^2)$	Calculation: N=995 units of house e= 5% $n= 995 / (5\%)^2$ n=278				
	Population Size = 995 Unit of House Sample Size = 278 Units (with error 5%, confident level 95%)					
	$100 \times \frac{278}{995} = 27.93\%$ <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border-top: 1px solid black; border-bottom: 1px solid black;">Alam Prima</td> <td style="border-top: 1px solid black; border-bottom: 1px solid black;">435 Units</td> </tr> <tr> <td style="border-bottom: 1px solid black;">PRIMA</td> <td style="border-bottom: 1px solid black;">560 Units</td> </tr> </table>	Alam Prima	435 Units	PRIMA	560 Units	Calculation: $27.93 \div 100 \times 435 = 121.5$ (122) $27.93 \div 100 \times 560 = 156.4$ (156) TOTAL = 278 Units
Alam Prima	435 Units					
PRIMA	560 Units					

Figure 2. Sample Size

Figure 2 above demonstrated that a total of 278 units or house buyers were expected to answer the survey. Questionnaire forms were then distributed from a starting point and thereafter placed at every fourth door. This procedure continues until the study had reached its sample size total. The questionnaire was then collected after a week.

3. Results and Discussion

“Affordable house” has been understood with different concepts and definitions and does not clearly justify the actual purpose of the product. In fact, ‘affordable’ brings different meaning to individuals or organizations based on the various categories of affordability. The concept of affordable housing imposed by the government has been misunderstood by many. Moreover, the National Housing Policy which acts as the main reference for affordable housing development had not distinctly justify affordable housing’s criteria. It was also revealed that the federal and state governments, as well as the provider agencies had established and embrace their own affordable housing policy which inevitably led to the inconsistency of the concept for affordable housing. The concept of affordable housing is also confusing in which affordable houses are often branded as ‘public housing’ or ‘affordable public housing’. Furthermore, there are numerous housing programs by various agencies with different concepts.

The study too discovered that the price range for affordable housing had not been specifically established in the National Housing Policy. Thus, prices are inconsistent between states or agencies or through various products and concepts. Additionally, the ceiling price was not determined therefore allowing for the increased of house price. Even though house price depends very much on the land value,

location, material, built-up area and so forth, a ceiling price to some extent will control or regulate house price. Current policies failed to prevent the house prices from rising out of the reach of ordinary Malaysians. From the questionnaire survey, house buyers told that price ranges from RM101,000 to RM200,000 for PR1MA houses, but most units were sold at RM151,000 to RM200,000 depending on the design of units. For SPNB buyers, houses were sold directly through the agency ranging from below RM100, 000 to RM250, 000.

Results also uncovered that most states in Malaysia focuses on affordable housing for the low-income group through low-cost housing quotas for housing projects. This had therefore required for a review in the quota and to revise the demands for houses especially from the middle-income households' perspective. For many years, the issue of affordability is no longer a challenge for the low-income group alone but is seen as crucial among the middle-income urban dwellers. The middle-income group is not eligible to purchase low-cost housing based on their household income. However, there is no distinctive range of household income for the middle-income group. For now, the middle-income is described between RM2, 500 and RM10, 000 by provider agencies.

Malaysian have experienced the delivery of a mixture of housing policies. Some are specifically designed to aid housing initiatives and programs, and some are embedded in other policies. And there are also policies seen as intangible but addresses the well-being of the public through the provision of housing. Even though there are many policies which consider housing development in Malaysia, the country still encounters with issues in housing. The National Housing Policy is perceived as the prime policy. Although the context is large yet applicable throughout the country. The commitment is to ultimately ensure that all citizens will have access to buy a house. Other specific housing policies were addressed in the 5-Year Malaysia Plans and while Malaysia is constantly facing with housing affordability, the government had put forward its attention towards the citizen in terms of affordability critically with the formation of National Housing Policy affordable housing provider including the PR1MA Corporation during the 10th Malaysia Plan.

Even though the government is the main provider, various private agencies are involved in developing affordable housing. Despite the various affordable housing programs, the federal and state governments are responsible for housing provision. This tier-governments has resulted in various parties and roles at each level of government, bringing effects and challenges to the delivery process. There should be a framework in a single form of consolidated housing agency which regulates the delivery system of affordable housing development in Malaysia and avoid the duplication of roles and conflicts among the parties.

The study also revealed that the PR1MA Corporation and SPNB have the same purpose of developing affordable houses on behalf of the government but maintain different concept and strategies. SPNB build affordable houses for the low and middle-income groups throughout Malaysia including sub-urban areas while PR1MA provides affordable houses for the middle-income group in urban areas only. Nevertheless, both agencies act as developers and are responsible for the whole production process, ensuring that affordable houses are successfully constructed, marketed and sold. But because PR1MA houses are in urban areas, the price tends to be higher than SPNB's houses. Nevertheless, the questionnaire survey conducted among house buyers revealed that majority of PR1MA house owners (71.6%) and SPNB's buyers (57.4%) suggested that the price offered was acceptable as compared to houses sold at free market.

In terms of the delivery process, the study found that both PR1MA and SPNB undergo similar typical development procedures involving three major stages known as the pre-development stage, construction and post construction stage. The process starts from inception until the hand-over of completed houses to the buyers. These procedures would have involved land acquisition, feasibility study and planning approval. Thereafter, upon receiving planning approval, construction will follow. However, during the process. The study observed that several additional procedures were executed by PR1MA, including balloting process before construction takes place (Figure 3). PR1MA believes that the balloting process will avoid prejudice in selecting the buyers. This had not been the case for SPNB. Nonetheless, even though SPNB is not undertaking similar tasks as PR1MA, it had not affected SPNB's development process. In fact, the survey showed that majority of PR1MA and SPNB's house buyers claimed that

some procedures were easy to follow, and the system is user-friendly. To the PR1MA house buyers, the balloting system was reported by many (39%) as fair and transparent.

Results from the survey among house buyers discovered that most PR1MA buyers (58.7%) experienced about two (2) years before receiving the house key, while SPNB house buyers (41.6%) had to endure a longer duration until three (3) years before obtaining their house key. Because of this, the SPNB house buyers expressed their frustration because the project was completed later than expected therefore house keys were delivered later than the target. Because of this delay, SPNB buyers (34.7%) claimed that the most difficult part throughout the process was obtaining the Certificate of Completed and Compliance (CCC) when majority of PR1MA buyers (16.5) believed that the stage of preparing the money for various payments was challenging. Finally, when enquiring about the respondents' opinion in relation to the whole delivery process, many of PR1MA house buyers (32.1%) agreed that the whole process of buying the house was simple and easy. On the contrary, the SPNB house buyers (43.6%) were mostly unsatisfied with the process and claimed it was too slow.

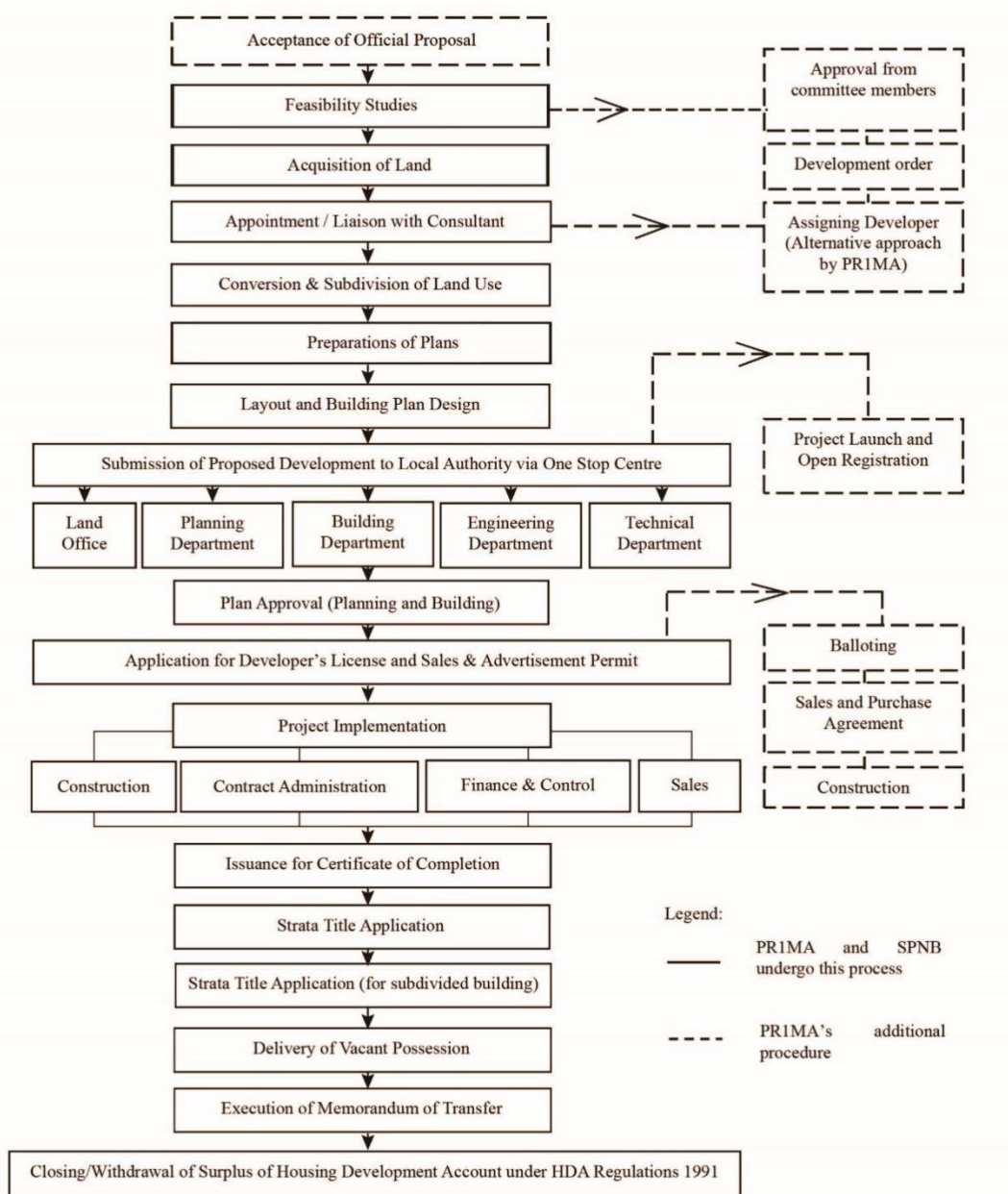


Figure 3. The Delivery Process of Affordable Housing for PR1MA and SPNB

4. Conclusion

This paper has presented the results of a study, which focuses on affordable housing delivery system in the urban areas, especially for the middle-income group. Initial study uncovered the continuing issues of affordability and accessibility to house ownership for the middle-income households. PR1MA and SPNB were selected as case studies due to its function as provider agencies in developing affordable houses in urban areas. Based on the discoveries, it was clear that there appeared to be a misconception of affordable housing because of the various agencies and programs, and the weaknesses of the National Housing policy that failed to outline and justify affordable housing criteria. In addition, there is also no specific guideline enforced and complied by all affordable housing developers in Malaysia. In fact, there is no ceiling price enforced for affordable houses. Other issues were also revealed including the inconsistency of selling price, the focus of developing affordable housing for the low-income group rather than middle-income and the numerous policies concerning housing. The 3-tier government in Malaysia and various private agencies also led to numerous roles. An agency under one roof would benefit more as it will be just one regulator, with policies, enforcement and reduction in conflict of roles.

PR1MA and SPNB practice similar delivery system for affordable housing provision. Only that, additional tasks were seen from the PR1MA's process including its balloting process which believed to be an approach for equality and fairness. Meanwhile, respondents from PR1MA and SPNB had different views based on their experience throughout the process of purchasing their houses. SPNB buyers were not so pleased with the duration of project completion and argued that the whole process was too slow. Despite those issues, for both PR1MA and SPNB buyers, majority claimed that the houses they bought were relatively cheaper than the free market. Nevertheless, this study has shared some lessons based on the findings especially to reduce the limitations of delivery system, which affect the buyers, and to be more mindful of the middle-income needs and not just the lower-income group. These discoveries can be useful for the authorities and should not be taken easily by private developers.

5. References

- [1] MA. Hassan, Hamdan, H., Abdullah, J. & Abdullah, Y.A. (2017) Location Housing Affordability: A quality of life indicator in Malaysia, *Environment-Behaviour Proceedings Journal*, Vol.2, No.4 Available at: <https://ebpj.eiph.co.uk/index.php/EBProceedings/article/view/940>
- [2] Jamaluddin, N.B., Abdullah, Y.A. & Hamdan, H. (2016) Encapsulating the delivery of affordable housing: An overview of Malaysian practice, *MATEC Web Conf.*, Vol. 16 (2016) the 4th International Building Control Conference. Available at: https://www.matec-conferences.org/articles/mateconf/pdf/2016/29/mateconf_ibcc2016_00047.pdf
- [3] Hashim, Z.A. (2010). House price and affordability in housing in Malaysia. *Akedemika*, 78, 37-46.
- [4] Mariana Mohamed Osman , Muhammad Adib Ramlee , Nasriah Samsudin , Noor Suzilawati Rabe , Muhammad Faris Abdullah , & Najihan Khalid (2017) Housing Affordability In The State of Johor, *Planning Malaysia Journal*, Vol. 15 (2017), 347-356, Available at: <https://www.planningmalaysia.org/index.php/pmj/article/view/251/231>.
- [5] Institute of Strategic and International Studies (ISIS) Malaysia. (2013). *ISIS Roundtable: Providing Public and Affordable Housing for Malaysia*. Retrieved from www.isis.org.my/files/IF_2013/IF3_2013.pdf
- [6] MA Hassan, Abdullah, J. & Hamdan, H. (2017) A Conceptual Overview of Social Spatial Pattern for Housing Affordability, *Journal of Applied Environmental and Biological Science*, 7(5S) 41-44, Available at: [https://www.textroad.com/pdf/JAEBS/J.%20Appl.%20Environ.%20Biol.%20Sci.,%207\(5S\)41-44,%202017.pdf](https://www.textroad.com/pdf/JAEBS/J.%20Appl.%20Environ.%20Biol.%20Sci.,%207(5S)41-44,%202017.pdf)
- [7] Malek, N.M. and Husin, A. (2012). Pemilikan Rumah dalam Kalangan Masyarakat Bandar Berpendapatan Sederhana dan Rendah di Malaysia. *Sosiohumanika*, 5 (2).

- [8] Bakhtyar, B., Zaharim, A., Sopian, K., Saadatian, O., and Moghimi, S. (2013). Quality housing in affordable price for Malaysian low income. *WSEAS Transactions on Environment and Development*, 2(9), 78-91.
- [9] Baqutayan, S.M.S. (2014). The affordable housing stress among middle-income group. *Journal of Humanities and Social Science*, 19(7), 82-90.
- [10] Shuid, S. (2015). The housing provision system in Malaysia. *Habitat International*, 1-14. <http://dx.doi.org/10.1016/j.habitatint.2015.11.021>
- [11] Baqutayan, S., Ariffin, A.S., and Raji, F. (2016). Affordable Housing Policy: Issues and Challenges among. *International Journal of Social Science and Humanity*, 6(6), 433-436. doi:10.7763/IJSSH.2016.V6.686
- [12] MA Hassan (2020) Modified Location Housing Affordability of Low and Middle Income Households in Urban Areas in Malaysia, PhD Thesis, Universiti Teknologi Mara Shah Alam.
- [13] Yaakob, H., Yusof, F., and Hamdan, H. (2012). Land Use Regulations towards a Sustainable Urban Housing: Klang Valley Conurbation. *Procedia Social and Behavioural Sciences*, 68, 578-589.
- [14] REHDA. (2014). *The Housing Delivery System in Malaysia: Opportunities and Challenges*. Retrieved from http://www.housingfinance2014.Org/fileadmin/2014/Presentations_English/5_1_Michael_Yam_English.pdf
- [15] Economic Planning Unit. (2013). *Laporan Kesejahteraan Rakyat Malaysia 2013*. Retrieved from <http://www.epu.gov.my/documents/guest/2014/Penerbitan/Januari/Laporan%20Kesejahteraan%20Rakyat%20Malaysia%202013/>
- [16] Shuid, S. (2010). *Low income housing allocation system in Malaysia: managing housing need for the poor*. Paper presented at 22nd International Housing Research Conference, Istanbul, Turkey. 4-7 July 2010.
- [17] Chang, K.L. (2013). *The Housing Affordability Question*. In *Housing the Nation: In Housing the Nation: Policies, Issues and Prospect*. Kuala Lumpur: Cagamas Berhad.
- [18] Mazlan, M., and Aziz, I. (2013). Report on Providing Public and Affordable Housing for Malaysia: Prepared for the Institute of Strategic and International Studies (ISIS) Malaysia. Retrieved from www.isis.org.my/files/ISIS_AR_2013
- [19] MA Hassan, Hamdan, H., Abdullah, J. & Abdullah, Y.A. (2018) Housing and Transport Expenditure: An Assessment of Location Housing Affordability, *Planning Malaysia Journal*, Vol. 16 (2018). Available at: <http://www.planningmalaysia.org/index.php/pmj/article/view/465/375>
- [20] National Housing Department. (2016). Maklumat Korporat bahagian dan unit. Retrieved from <https://ehome.kpkt.gov.my>
- [21] Labin, A.M.J.E., Che-Ani, A.I., Tawil, N.M., Nawi, M. N. M., Othuman Mydin, M.A. (2014). *Criteria for Affordable Housing Performance Measurement: A Review*. Retrieved from http://www.e3s-conferences.org/articles/e3sconf/pdf/2014/02/e3sconf_etsdc2014_01003.Pdf
- [22] PR1MA Corporation. (2016). *Official Portal: PR1MA Homes*. Retrieved from <https://www.pr1ma.my>
- [23] Syarikat Perumahan Negara Berhad (2014). Official website: Rumah Mampu Miliki. Retrieved from <http://www.spnbaspirasi.com.my>
- [24] Selangor's Housing and Property Board. (2014). *Report on Dasar Perumahan Mampu Milik Negeri Selangor: Prepared for Pekeliling Lembaga Perumahan Dan Hartanah Selangor Bilangan 1 Tahun 2013*. Retrieved from lphs.selangor.gov.my
- [25] Chan, L. (1997). *Housing delivery system: The industry viewpoint*. In *Housing the Nation: A definite Study* Kuala Lumpur: Cagamas Berhad.
- [26] Hamdan, H. (2012). *Housing Delivery System*. Universiti Teknologi MARA (UiTM) Shah Alam. (Unpublished)
- [27] Abdullahi, B.C., and Wan Abd Aziz, W.N.A. (2011). Pragmatic Housing Policy in the Quest for Low-Income Group Housing Delivery in Malaysia. Retrieved from Research Gate.

- [28] Ooi, C.S. (2017) T20, M40, B40 Income Classifications. Retrieved from <https://www.comparehero.my/blog/t20-m40-b40-malaysia>
- [29] Grewal, I.S. (2014). Malaysia's Middle-Class Challenge: Making Progress. *The Star Online*. Retrieved from <http://www.thestar.com.my>
- [30] Wan Abd Aziz, W.N.A, Hanif, N.R, Singaravello, K. (2009). A Study on Affordable Housing within the Middle-Income Households In The Major Cities And Towns In Malaysia. Retrieved from es.scribd.com
- [31] Khazanah Research Institute. (2018). The State of Household 2018 Different Realities. Retrieved from http://www.krinstitute.org/Publications-@-The_State_of_Households_2018_-_Different_Realities.aspx
- [32] Khoza, R.B.M and Kabir, H. (2014). An evaluation of South African low-income housing delivery process: from project quality management perspective. *Public and Municipal Finance*, 3(1), 32-42.
- [33] Patton, C.V and Sawicky, D.S (1993). *Basic Method of Policy Analysis and Planning (Second Edition)*, New Jersey: Prentice Hall.
- [34] Shamsuri, S. (2013). *Research Methods for the Social Sciences*. Selangor: DSS Publishing Enterprise.
- [35] Neuman, W.L. (2011). *Social Research Methods: Qualitative and Quantitative Approaches (7th Edition)*. USA: Allyn and Bacon.
- [36] Creswell, J.W. (2011). (5th edition) *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. London: SAGE Publications Ltd.
- [37] Sekaran, U. and Bougie, R. (2014). *Research Methods for Business (6th Edition)*. United Kingdom: Wiley & Sons Ltd.

Acknowledgements

The authors would like to thank the Ministry of Higher Education, Malaysia for funding the study through the FRGS grant with the project code 600-RMI/FRGS 5/3 (73/2014) and also would like to thank the Universiti Teknologi MARA (UiTM), specifically, the Research Management Centre (RMC) for supporting the study. A special thank you note goes to everyone who had participated and contributed in this study whether directly or indirectly.