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HOME OWNERSHIP IN LOW-COST HOUSES IN PENANG, MALAYSIA

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ABSTRACT

Low-cost housing has been the concern of many parties lately especially the government agencies. Housing prices are rising faster than wages around the world, many people especially the low-income groups thus turn towards low-cost housing for home ownership. This paper discusses the home ownership in low-cost housing in Penang, Malaysia, especially the importance of housing towards us, the low-cost housing concept adopted by the Malaysian government, and the low-cost housing provision done by both public and private sector in order to eliminate the housing crisis in Malaysia. Through the Malaysia Five-Year Plan, various programs are created and have been undertaken by both government bodies and private agencies to help increase home ownership amongst the low-income groups. Provision to provide greater number of low-cost housing has also led to the consideration of usage of alternative construction techniques such as the Industrialised Building System (IBS) by local authorities. Although the usage of IBS in Malaysia's construction industry is gaining in popularity, however, it is yet to operate in full capacity. Through this paper, it is hoped that IBS can become more widely accepted especially for the provision of low-cost houses. The methodology for this study is through survey using questionnaires. From the questionnaires, the household characteristics of respondents are studied. The results highlight issues relating to low-cost housing such as the living conditions faced by the respondents.

1. INTRODUCTION

A home is very important to us human as it can affect us physically and psychologically. Article 25 (1) of the Universal Declaration of Human Rights (1948) which was adopted by the United Nations to represent the first global expression of rights to which all human beings are inherently entitled stated that it is everyone's right to have a proper housing. However, a report to

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the United Nations in 2005 stated there were an estimated 100 million homeless people in the world, and an additional 1.6 billion living without adequate housing. In this research, the study discusses home ownership in low-cost houses in Penang Malaysia. It gives the overview of the low-cost housing in Malaysia before discussing the result of the analysis, findings and recommendations in this study with particular references to home ownership of low-cost houses in Taman Tun Sardon, Penang.

2. LITERATURE REVIEW

2.1 LOW-COST HOUSING

Low-cost housing is defined according to its selling price of RM 25,000 (US$6135) per unit or less (Second Malaysia Plan, 1971). The Ministry of Housing and Local Government has further laid down the following guidelines for this category of housing:

1. The target group consists of household with monthly incomes not exceeding RM 750.
2. The type of houses may include flats, terrace or detached houses.
3. The minimum design standard specifies a built-up area of 550 – 600 square feet, 2 bedrooms, a living room, a kitchen and a bathroom.

The ceiling price of RM 25,000, set in the 1982, has been a contentious issue for developers and consumers alike because the cost of construction for low-cost houses is typically higher than its selling price (Liang, 2011). Also, in the effort to improve the quality and range of housing and to accommodate social and cultural preferences, various states have initiated steps to include some 3-bedroom units in the low-cost schemes (Salleh and Lee, 1997).

In 2002, the government has introduced the new pricing guideline for the low-cost houses in order to improve the quality of low-cost houses and simultaneously meet private developer's argument for a review of the selling prices of these units. Table 1 summarises the new selling prices schedule. With the new selling prices of low-cost houses, it is to be expected that the design specifications be revised too. The new design specifications are summarized in Table 2.

Table 1: Low-cost Housing Price Structure Based on Location and Target Groups
(Source: Ministry of Housing and Local Government, 2002)

House Price Per Unit	Location (Land price per square meter)	Monthly Income of Target Group
RM 42,000	City Centre & Urban (RM 45 and above)	RM 1,200 – RM 1,500
RM 35,000	Urban & sub-urban (RM 15 - RM 44)	RM 1,000 – RM 1,350
RM 30,000	Small township & Sub-rural (RM 10 - RM 14)	RM 850 – RM 1,200
RM 25,000	Rural (below RM 10)	RM 750 – RM 1,000

Note: RM 1 (1 Malaysian ringgit) ≈ US$0.245

Table 2: New Design Specifications of Low-cost Houses
(Source: Ministry of Housing and Local Government, 2002)

Elements	Terrace Houses	Flats
Floor Space	48-60-meter square	45-56-meter square
Bedroom (Minimum number)	3	3
Minimum area of habitable room First room Second room Third room	 11.7 m² 9.9 m² 7.2 m²	 11.7 m² 9.9 m² 7.2 m²
Kitchen (Minimum area)	4.5 m²	4.5 m²
Living and dining rooms	Provided as one combined space or separately with adequate area according to internal layout.	Provided as one combined space or separately with adequate area according to internal layout.
Bathroom and toilet	Provided separately with minimum area of 1.8 m² each.	Provided separately with minimum area of 1.8 m² each
Storage space and porch	Adequate provision for resident's comfort	Adequate provision for resident's convenience and comfort
Drying area (*) Launderette facilities	-	Adequate provision for each unit.

Note: (*) Must be provided according to the 'Guidelines for the provision of launderette facilities in multi-storey buildings' prepared by Local Government Department, Ministry of Housing and Local Government.

2.2 LOW-COST HOUSING IN MALAYSIA

Low-cost housing in Malaysia is undertaken by both the private and public sectors (Salleh and Lee, 1997). The government's commitment towards low-cost housing started during the First Malaysia Plan while the private sector's involvement was mooted in the Third Malaysia Plan when the government realized the need and importance of the role of the private sector in ensuring an adequate supply of low-cost housing for the country (Salleh and Lee, 1997). Private sector's participation has increased since the Fourth Malaysian Plan, when the government sought the co-operation of private developers in the provision of low-cost housing (Salleh and Lee, 1997). Specifically, the government has made it mandatory for developers to build at least 30 % low-cost houses in housing projects (Salleh and Lee, 1997). The private sector's performance on low-cost housing improved drastically during the Sixth Malaysia Plan with a reported 100 % achievement of the targeted 217,000 units of low-cost housing for the period while the public agencies only manage to achieve an estimated number of 43.7 % (Salleh and Lee, 1997).

Under the Seventh Malaysia Plan, the sensitivity of the government and the changing attitude of housing developers can be clearly seen in the participation of both parties in programs like the low-cost housing design competition organized to explore the possibilities for upgrading low-cost housing quality and reducing the cost of development (Salleh and Lee, 1997). Through the Seventh Malaysia Plan, a total of 859,480 units of houses were constructed by both the private and public sectors, giving it an achievement rate of 107.4 % since the total planned units were 800,000

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numbers. In the Eighth Malaysia Plan, the numbers of targeted low-cost units to be built for the citizen of Malaysian were 232,000 units. But at the end of the period, both private and public sector managed to build a total of 200,513 units. This gives the achievement rate of 86.4 %.

So far, the government of Malaysia have done a job well done in combining the effort of public and private sector to build affordability houses for its citizens. From 1990 till 2009, about 808,000 units of low-cost affordable housing were provided to support Malaysians in need with approximately 128,000 of these built during the Ninth Plan period (Tenth Malaysia Plan, 2010). Wanting to do more, in the Tenth Malaysia Plan, for urban and semi-urban areas, affordable housing programmes and clusters as well as the provision of low-cost housing will be expanded (Tenth Malaysia Plan, 2010). These public housing units will be offered to qualified individuals and families with the aim to encourage greater home ownership among the bottom 40% households (Tenth Malaysia Plan, 2010). The private sector will also be encouraged to develop more affordable medium-cost housing (Tenth Malaysia Plan, 2010).

2.3 USAGE OF INDUSTRIALISED BUILDING SYSTEM (IBS) IN LOW-COST HOUSING

In a lay-man's term, IBS is a construction system whereby the building is being built using pre-fabricated components. The manufacturing of these components are systematically done using machine, formworks and other forms of mechanical equipment. The building components such as wall, floor slab, beam column, staircase and so on are produced in mass production either in factory or at site according to the specification. Once completed, the components will be delivered to construction site for assembly and erection (Salahuddin, 2010).

The most important characteristic of IBS is that the components are prefabricated on or off-site. Prefabrication means breaking a whole unit of building into different components such as the floors, walls, column, beams, roof, etc. and having these components separately prefabricated or manufactured in modules or standard dimensions. From these definitions, construction using IBS method is therefore different from the conventional method of construction. IBS system is known for its benefits in term of shorter construction time, less labour involved, material saving, better quality control and immunity to weather changes. IBS method shows a different approach to the construction method commonly used, hence, offering an alternative to the existing conventional construction system (Salahuddin, 2010).

IBS was introduced to Malaysia during the early 1960's when the Ministry of Housing and Local Government of Malaysia visited several European countries and observed their housing development program (Thanoon et al, 2003). With the exchanged knowledge, the government started the first IBS project in the capital of Malaysia itself. About 22.7 acres of land along Jalan Pekeliling, Kuala Lumpur were being used to develop 7 blocks of 17 stories flat, 3000 units of low-cost flat and 40 shop lots. This project was awarded to JV Gammon & Larsen and Nielsen who used large panel precast concrete wall and plank slabs in the construction. The project was

completed within 27 months starting from 1966 to 1968. (CIDB, 2003; Thanoon et al., 2003)

In 1965, the second housing project initiated by the government comprises of 6 blocks of 17 stories flats and 3 blocks of 18 stories flats at Jalan Rifle Range, Penang. The project was awarded to Hochtief and Chee Seng and they use the French Estoit System (CIDB, 2003).

Another earliest IBS project was at this study's sampling area, Taman Tun Sardon, Penang. The IBS pre-cast components and system used in this project was designed by the British Research Establishment for low-cost housing (Salahuddin, 2010), which was quite similar to the system used in a construction in Edmonton, North London (Salahuddin, 2010). Nonetheless, the building design was very basic but not considering the aspect of serviceability such as the local needs to have wet toilet and bathroom (Salahuddin, 2010).

Many of the construction in the following years utilised precast wall panel system. One can observe that IBS was engage at first in the construction of low-cost high-rise residential building to overcome the increasing demand for housing needs (Salahuddin, 2010). However, the industrialisation of construction at the earlier stage was never sustained (Salahuddin, 2010). A number of Initial failures in some fabricated system made the industry players afraid of changing their construction method. Some of the foreign systems that were introduced during the late 60's and 70's were also found not suitable with the Malaysia's climate and social practices (Salahuddin, 2010).

As a result, after the year 1994, hybrid IBS application was used. Many national iconic landmarks such as the Bukit Jalil Sport Complex, Kuala Lumpur Convention Centre (KLCC), Lightweight Railway Train (LRT), KL Sentral Station, Kuala Lumpur tower, Kuala Lumpur International Airport (KLIA) as well as the Petronas Twin Towers are just some of the examples (Salahuddin, 2010). It is also included in the development and construction of the new administration city of Putrajaya and the first cyber city of Cyberjaya (Salahuddin, 2010).

3. METHODOLOGY

The methodology for this research is through survey using questionnaires. The set of questionnaires are developed based on the objective of studies. This quantitative technique of research by the questionnaire-based survey is considered the first level of primary data collection for this study.

There are two kinds of questions posed in the questionnaire namely open-ended questions and closed-ended questions. Open-ended questions are questions that allow respondents to answer freely on certain things while closed-ended questions are created to restrict their responses choices by forcing the respondents to answer according to the alternatives provided. The sampling area is narrowed down to the residential areas of Taman Tun Sardon and Taman Brown, both located side

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by side in the township of Gelugor. Taman Tun Sardon is a large working-class neighbourhood consisting of five-storey walk-up blocks of low-cost flats built in the 1980s. Taman Brown on the other hand consists of a mixture of low, medium and high cost houses ranging from terraces to semi-detached houses as well as some bungalows initially developed in the early 1960's to house government servants.

The selection of these two as the sampling area is done by using the stratified multistage random sampling design. As we all know, Penang state is divided into five districts or *daerah* in Bahasa Malaysia namely the Southwest District (*Daerah Barat Daya*), Northeast District (*Daerah Timur Laut*), Northern Seberang Perai District (*Daerah Seberang Perai Utara*), Central Seberang Perai District (*Daerah Seberang Perai Tengah*) and Southern Seberang Perai District (*Daerah Seberang Perai Selatan*). Among these five districts, one district is selectively chosen. In this case, it is the Northeast District (*Daerah Timur Laut*). Next, among all the sub-districts, one of them is selectively chosen. In this case, it is the sub-district of Gelugor. Finally, among all the residential areas with low income groups in Gelugor, Taman Tun Sardon and Taman Brown are selectively chosen to be the sampling area.

Due to the fact that there is a mixture of low, medium and high-cost houses in that area, but at the same time, more towards low-cost settlement, this makes it the main reason for Taman Tun Sardon and Taman Brown to be selected as the sampling area. Furthermore, both residential areas are located next to each other. As it is impossible to distribute the questionnaires to the total population in the sampling area, only a portion of 2.5 % from the total population is selected as the sample size. According to the Population and Housing Census by the department of statistics Malaysia (2010), Gelugor has a total household of 2,840 in the year 2010. From this, the targeted number of respondents is calculated to be 2,840 households multiplied by 2.5 % thus equals to 70 households.

During the conduct of the survey, it adopted the method of random sampling. Random sampling is about a subset of individuals being chosen from a larger set. Each individual is chosen randomly and entirely by chance, such that each individual has the same probability of being chosen at any stage during the sampling process. For the case of this study, the individual is therefore referring to a household in the sampling area. Random sampling is an unbiased surveying technique. An unbiased random selection of individuals is important so that if a large number of samples were drawn, the average sample would accurately represent the population. However, this does not guarantee that a particular sample is a perfect representation of the population. Random sampling merely allows one to draw externally valid conclusions about the entire population based on the sample.

The questionnaires were analysed by category as well as by factors using the cross-tabulation method. Analysis by category refers to the analysis of each part of the questionnaire, whereas analysis by factors refers to the analysis of each question in each part of the questionnaires. ‘Cross

tabulation' or 'cross-tabs' is a method of analysis that combine two or more numeric variables. It is often presented in the form of a table in a matrix format and they provide the most basic picture of the interrelation between the two variables and can help find the interactions between them. After cross tabulation, the tabular data will be converted into graphic representations of bar charts or pie charts respectively in order for the questionnaires to be analysed using the frequency analysis. The results obtained will be presented in form of frequency number as well as percentages of the total respondents.

4. RESULTS AND DISCUSSION

4.1 TYPOLOGY OF CURRENT HOUSE

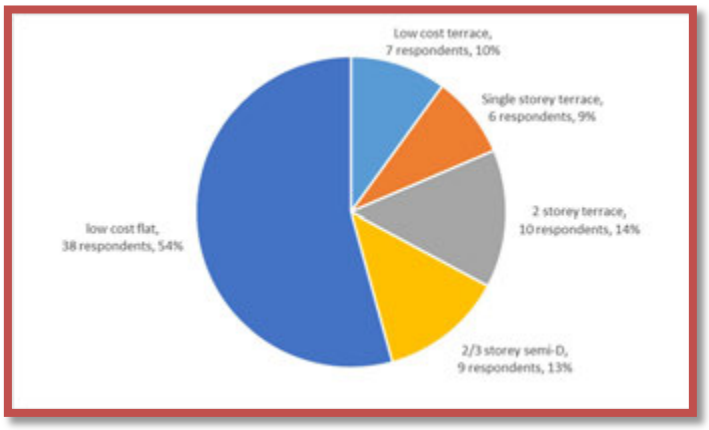

Figure 1: Typology of houses currently resided by respondents

Figure 1 shows the distribution of houses according to their typology currently occupied by the respondents. A majority of 54 % or 38 respondents are living in low-cost flat. Two-storey terrace have the second most number of respondents with the figure of 14 % or 10 respondents followed by 2/3 storey semi-detached house with 13 % or 9 respondents. Next is the low-cost terrace with 10 % or 7 respondents and finally is the single storey terrace with 9 % or 6 respondents.

4.2 HOUSEHOLD INCOME

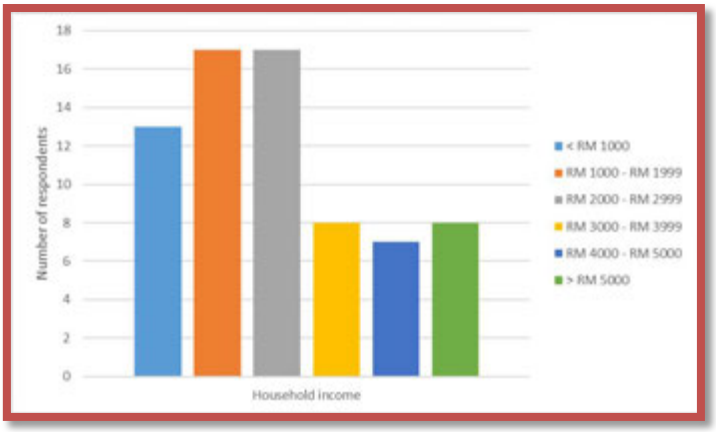

Figure 2: Household income of respondents

For this study purpose, the respondent's monthly household income refers to the sum of all

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forms of income, Figure 2. This includes any financial aid, monthly allowances and salary, side income and so on. From Figure 3, the income level of RM 1,000 to RM 1,999 as well as RM 2,000 to RM 2,999 both has the most number of respondents. The income level of RM 4,000 to RM 5,000 has the lowest number of respondents in the study area.

According to the Household Income and Basic Amenities Survey 2012 (HIS/BA 2012) done by the Department of Statistics, Malaysia, the mean monthly household income for Malaysians in year 2012 was RM 5,000, whereas, the median household income in Malaysia was RM 3,626 in 2012. Therefore, the mean was significantly higher than the median income because the value of the mean is skewed by high-income earners (Yin, 2014). The median gives a more accurate picture of what the 'person in the middle' earns. It is the value in the center of all households surveyed. This means that 50 % of Malaysian households earned RM 3,626 and below in 2012 (Yin, 2014).

To sum up, we can deduce that low-income households are those households with less than RM 3,000 per month. Referring back to Figure 3, it is found that 67 % or a total of 47 respondents in the study area are considered to be low-income households.

4.3 TYPOLOGY OF CURRENT HOUSE AGAINST HOUSEHOLD INCOME

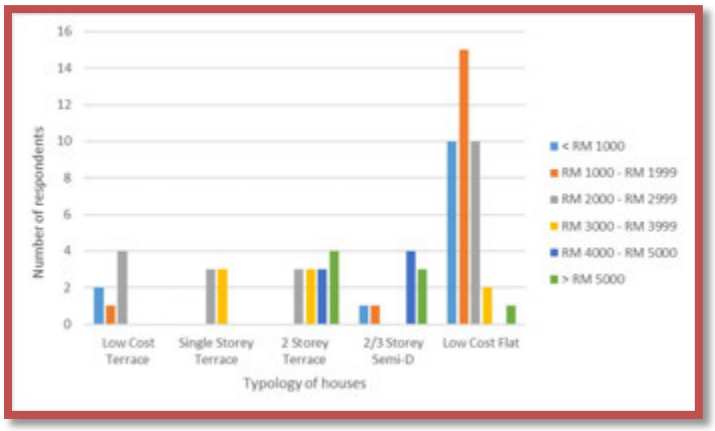

Figure 3: Typology of houses currently resided by respondents according to their income level.

Based on Figure 4.3, it shows that most of the respondents who are currently residing in low-cost flat, the majority of them come from the income level of RM 1,000 to RM 1,999. Followed by the income of groups level less than RM 1,000 and income level of RM 2,000 to RM 2,999, both have the second most number of respondents. As for the remaining of the income groups, the proportion of respondents was very few who are residing in low-cost flat or they reside in another categories of houses such as terrace or semi-D house.

4.4 HOME OWNERSHIP STATUS AGAINST TYPOLOGY OF HOUSES

Figure 4 shows the home ownership status of respondents and grouping them according to the typology of their current shelter. Based on the figure, of the 47 home owners, a majority of 30 respondents are currently residing in low-cost flat. In addition, it has found that a small number of respondents who owned different categories of houses such as 2/3 storey semi-detached house,

low-cost terrace, and 2 storey terrace. On the other hand, few number of the respondents reside by renting a house thus the category of flats is remaining as the highest category in terms of tenancy.

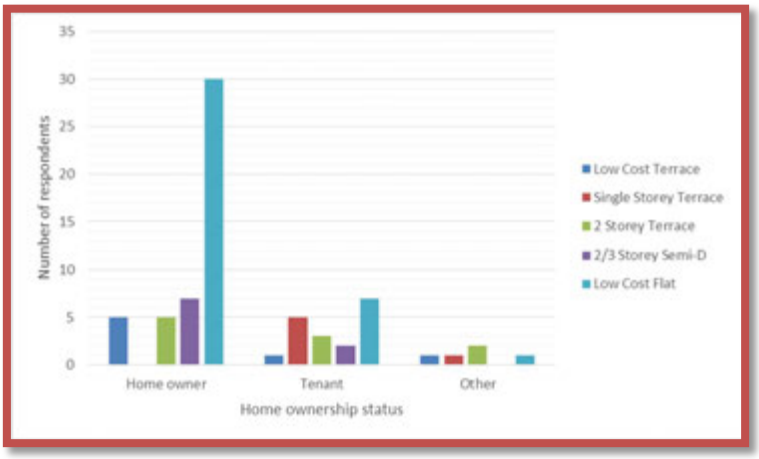

Figure 4: Home ownership status according to the typology of houses.

4.5 HOUSEHOLD CHARACTERISTICS

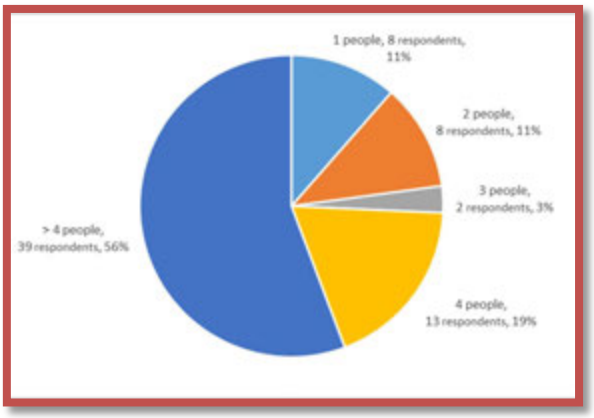

Figure 5: Household size of respondents

A household consists of related and/or unrelated persons who usually live together and make common provisions for food and other essentials of living (Department of Statistics Malaysia, 2010). Household size therefore refers to the number of person residing in a particular unit of dwelling. According to the Department of Statistics Malaysia (2010), the average household size for Penang is 3.93. Based on the Figure 5, it shows that the majority of household, which comprises of 56 % or 39 respondents, have a household size greater than 4 people. After that, the household size with 4 people comes in second with a percentage of 19 % or 13 respondents. Next, household size with 2 people and household size with 1 people stand side by side on the third place with each being 11 % that is equivalent to 8 respondents. Lastly, only 3 % or 2 respondents are having a household size of 3 people.

4.6 AFFORDABLE PRICE RANGE

There are three categories that got the highest number of respondents among the pricing groups, it came as follows. First group of the pricing range less than RM 25,000 which they

considered is affordable to them, a majority with 39 % of respondents as affordable as shown in Figure 6. Of these figures, a majority of the respondents are from the income level of RM 1,000 to RM 1,999 as followed by RM 2,000 to Rm 2,999. Based on Figure 4.6 also, the second group of the highest number of respondents is 25 % of respondents who agreed that the price range of RM 25,000 to RM 99,999 are considered affordable to them, resulted from the income level of RM 2,000 to RM 2,999 as the majority of respondents. Lastly, the third group of the highest number of respondents is14 % of respondents who considered the price range of RM 400,000 to RM 500,000 to be affordable for them since the majority of respondents came from income level of RM 3,000 to RM 3,999.

Figure 6: Pricing range that is considered affordable to prospect buyers

5. PROPOSAL FOR IBS SYSTEM

Today, the use of IBS as a method of construction is growing moderately. Although there are some private companies in Malaysia who have already teamed up with foreign expert to offer pre-cast solution to the construction projects (IBS Survey, 2003), pre-cast concrete components and prefabricated reinforcement are still not commonly used in most private sector (Tan, 1997).

Prefabrication is a key technology that can be used to increase building demand (Salahuddin, 2010). There are varieties of IBS technology offered in Malaysia such as formworks, precast load bearing wall panel, precast frame, precast floor and hollow core slab, sandwich, block panel and steel frame (Salahuddin, 2010).

The construction costs involved are labour, material, equipment and overheads. Reduction in any of these costs would be beneficial to both owner and contractor. For IBS, the reduction of costs involves reducing man power, material costs and operating costs (Salahuddin, 2010). With the reduction of one of the contributing factors that lead to the hike of house prices, more affordable houses would be able to be built.

6. CONCLUSION

Throughout the survey, 67 % of respondents in the study area are considered to be low-income households and a majority of them reside in low-cost flats. The low cost-flats which were built in the 1980s followed the old low-cost housing specifications, which is, equipped with 2 bedrooms, a

small living room, a kitchen and a bathroom. The building design was very basic but not considering the aspect of serviceability such as the need for an additional wet toilet or bathroom as well as a dry kitchen. Although the government had made revision on the design specifications for low-cost houses such as to provide 3 bedrooms instead of 2, however it can be said that these amended specifications does not fully fulfil the needs of majority of low-income groups. Moreover, in the study area, 56% of families have household size greater than four members.

So far, the government of Malaysia have done a good job in combining the effort of public and private sector to build affordable houses for its citizens. However, there is still an urgent need to build more affordable houses because of natural population growth, ever hiking of house prices and slow increase in wages. In order to achieve this, venturing into alternative construction technique is needed to improve the current conventional construction techniques. Several research papers have proven that the usage of IBS can enhance the provision of low-cost housing since IBS can save time and cost.

7. Acknowledgement

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