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Market analysis of housing shortages in Malaysia

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Abstract

The annual supply of housing in Malaysia is approximately four units per 1000 of the population; this is less than the recommended 8-10 units per 1000 in developing countries, implying that the Malaysian housing deficit units are likely to be on the increase. While the market is the most efficient way to determine housing price, the capital market for [affordable] housing have a very weak mechanism that if left unregulated will be ineffective and inefficient. The cost of accommodation continues to increase despite various government measures in the form of taxes and subsidies. Through a case study approach and survey questionnaire, this study examines the operation of affordable housing market the factors that determine the cost of affordable housing. The case study involved one of the affordable housing schemes. The study demonstrates that to base affordable housing price on market prices are seriously deficient in that it ignore the basic essence of affordable housing provision. There is no real basis for economists' strongly held believe that house prices must be determined by the market to be efficient. With the Kaiser-Meyer-Olkin measure 0.714, and Bartlett's test of sphericity (χ^2 (1005) = 563.821, $p < 0.05$), the major determinants of housing costs are strategic location, size of the housing and location. The study shows that government can intervene in affordable housing market in various ways to increase the homeownership rate

Keywords: rent control, cost model, affordable housing, market price, MyHome scheme;

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1. Introduction

The aim of this manuscript is to give a contextual overview of affordable housing market, rather than explain in full detail the complex issue in affordable housing market. A market is defined as a situation or arrangement that brings buyers and sellers into a close contact to exchange goods or services. In the market, the price paid for a good or service is determined by the supply and demand forces. Specifically, a market aims to allocate resources and to maximise the surplus of buyers and sellers. With the market structure, a buyer will not pay more than the value of the good or service 'earned'. On the other hand, the market allows sellers to maximise their surplus. While the market is the most effective way of allocating resources, it also fails because of factors like price, income distribution and quantity regulation, taxes, subsidies, externalities, public goods, social interests, common resources, monopoly, and high costs of the transaction. In other words, the market mechanisms could also lead to inefficiency [1]. Market failure is a situation where the market does not achieve 'economic efficiency' due to delivery of 'inefficient outcomes'. Therefore, alternative methods (such as first-come-first-served basis, majority rules, context, lottery, personal characteristics, and force) prove to be more efficient. In fact, there is no single mechanism – including the market – that allocates all resources efficiently [2]. Housing is a major industry where price mechanisms or market regulations are applied for efficiency. However, housing provisions are often controlled by governments. But, economists contend that the rent control would create scarcity, increasing both rental costs, encourage black market, search activity, reduce productivity and cost of ownership [2]. But like education and health, housing is an investment and not consumption. Hence, the question to ask, is if the benefit exceeds the cost? Housing is a measure of quality of life. For instance, a country with adequate housing would spend less on the preventions and controls of diseases, security, rehabilitation homes, and enhancement in social integration and economic prosperity. For the pensioners or retirees, housing is to them a security issue. The market capitalisation for housing has a weak mechanism that, if not regulated, is likely to be ineffective and inefficient. However, to invest in housing provision requires households to have funds. This is where the role of government in the housing market is crucial. The government can fill these gaps in a number of ways, including providing housing directly, providing funding without houses, or both. The role of government is therefore multiple or triple. Governments fill these gaps through subsidies, incentives, loans, lands, to both developers and home buyers.

From the mainstream economists' perspective, the market is able to reduce both shortage and surplus in the affordable housing market through price mechanisms; without government intervention. But unfortunately this theory has not worked and neither will the shortage in the housing supply go away if the economic theory only is considered. The immediate question therefore is why is the market unable to correct the housing shortages [and surplus in some cases]? Or can it? Again, the immediate answer is that affordable housing is a market failure; therefore, government has to intervene. Government intervenes in housing allocation through the rent control. Primarily, this is based on income and house price. Government sets a rent ceiling to increase access to homeowners. In market failure situation, equilibrium does not exist. That is, the quantity demand and supply does not reconcile each other. Often affordable housing is synonymous or perceived as a requirement of specifying minimum performance standard. But this is not the case, rather the ultimate aim to provide the desired standard at balance expenditure. Though in most cases, the standard of the house has an impact on the rental or selling price, but in reality what determine the price or value of the house extend beyond the quality standard alone/production costs rather factors like location, environments, transactional costs and other associated costs. Hence, the questions that required intermediate answers include; how does government formulate the policies on affordable housing supply, how does the government regulate affordable housing supply, what are the objectives of the government policies on affordable housing supply, what are the applicable instruments and what are the determinants of housing costs? However, this study addresses itself to the effect of rent control and on the determinations of the housing costs. The housing cost aspect is critical as the housing cost determinants change prospective home buyers' and homeowners' or homebuyers' willingness to buy a home or own a house, and therefore change their decisions. The study is based on a case study and survey questionnaire.

2. Theoretical framework: an overview

The need for housing in Malaysia is expected to increase remarkably due to rapid growth in population, interstate migration, changing economic status of citizens, changes in tastes, and dilapidation of existing housing stock. At 2020, the population is estimated to reach 32.4 million. While the need for poor and low-cost housing will continue, the emphasis of supply will be shifted to delivering vibrant housing that is commensurate with the country's status. The housing market is very volatile. To illustrate this, Figure 1 graphs changes in the volume and value of property transactions over the last 24 years. Due to large variations in number of transactions, the data are presented in an index forms. The average change in volume is 114, while the average change is the value of the property is 292 for the recorded period, indicating that price gained strength despite government controls of price and speculation. In 1990, the volume of property transactions was 148.20 (equivalent to RM15.16 billion); however, in 2014 this has increased to 384.06 (equivalent to some RM163 billion). This represents an expansion of 88% in volume and 166% in monetary terms. The sharp drop in housing market activity in 1998 is a result of the 1997 -1998 financial crisis. While there was a recovery towards 1999, it falls two years in 2003. The drop in 2009 also coincides with the 2008-2009 global economic meltdowns whose major reason was the collapse of the housing market in the USA from 2007 through 2009.
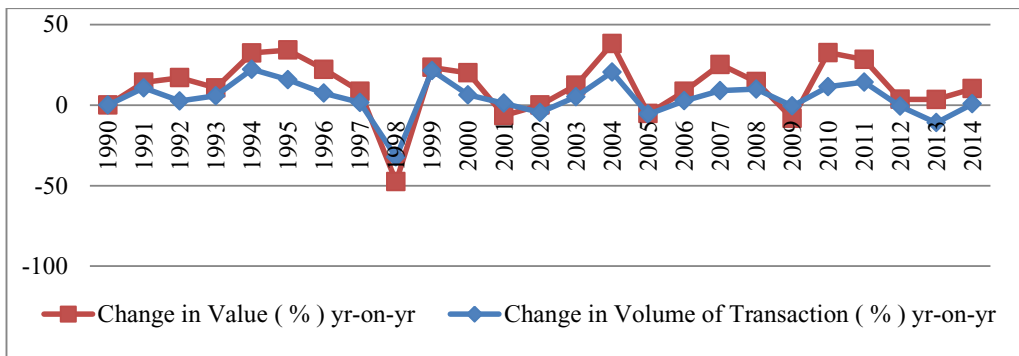

Figure 1 Annual Change in Volume and Value of Property Transaction 1990 – 2014 [4]

The total value of residential property transacted has grown significantly since 2009; and in 2014, exceeded the pre-crash level peak of 2005. While this trend is most likely to continue, perhaps the soar is due to government policies on home finances and increase in ownership. However, it is apparent from the house index that residential property prices have risen significantly in recent years (Figure 2).
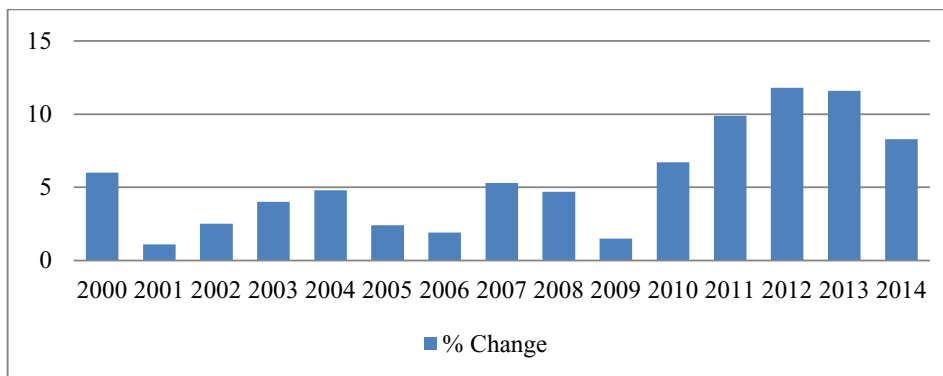

Figure 2 The Malaysian House Price Index. [5]

Statistics show that Malaysia has 4,831,791 residential units at 2015 representing an increase of 2.2% from 4,725,109 in 2013. That is, the production of units is approximately 107,000 per annum. With a population of 31 million, there are approximately six persons per home. This also means that there is a supply of four units per 1000 population annually. This statistic indicates that there is home shortage totaling about 12 million units. However, home-ownership was 63% in 2000; this dropped to 55% in 2010 [6]. To interpret, there is an annual decline of about 1% in home-ownership. Home-ownership will thus be less than 50% in 2020. As a results, housing prices are on the increase. In fact, benchmarked against international standards, housing in Malaysia is not affordable despite government measures [7]. For illustration, the cumulative monthly expenditure on rental for all Malaysians is close to 27% of household income [4]. However, for those in low and middle-income groups, it is 35% [8]. In fact, the 2014 inflation in housing, water, electricity, gas, and other fuels categories increased to 3.4% (2013: 1.7%), reflecting upward adjustment in electricity tariffs and a broad-based increase in rentals across different types of residential property [9]. Though based on 2014 statistics [12] the median income for 2016 was estimated to be RM5, 720, this is amount is not sufficient to provide affordable housing. Expenditure on housing (including rent, maintenance, utility bills) is economically substantial, amounting to approximately RM1600 for a month per household. This makes Malaysians spend more of their income on housing than on any other goods and services. To this effect, the government has launched various schemes to increase home-ownership, e.g. MyHome / Skim Rumah Pertamaku, Perumahan Rakyat 1Malaysia Rumah Mesra Rakyat, Program Rumah Mampu Milik, Program Penyelenggaraan 1Malaysia, Housing Loan Scheme, People's Housing Program, and Rumah Transit/ transit house programme. The major essence of the schemes is to increase homeowners through incentives. The schemes allow prospective homebuyers to pay less than the market price.

3. Research design

Research can be conducted through different methods, but what determining the 'best' method' are the purposes of the research guarded in terms of aims, and objectives, questions or hypothesis. For this study, two methods of data collection were used; namely, survey questionnaire and case study method. The case study involved the MyHome Scheme. The cost of MyHome in the cities is RM300, 000. The primary purpose of the scheme is to stimulate private sector investment in the construction of low and medium cost houses. Under this scheme, RM30,000 subsidy is offered for each unit to the developers. While the developers can select the location for the construction, government gives priority to developers that built the houses in the areas of high demand. The scheme has two plans. Plan 1 has built up area 800 square feet, with 3 bedrooms and 2 bathrooms, with the market price of RM80, 000- RM120, 000. Plan 2 has built up area of 850 square feet comprising with 3 bedrooms and 2 bathrooms, with the market price of RM90, 001- RM170, 000. For the plan1, for home buyers to qualify, the household monthly income should be between RM3, 000 RM4, 000 while for plan 2, the household monthly incomes are fixed at RM4, 001 to RM6, 000. The case study was centered on a leading property developer in affordable housing market that recently (around 3rd quarter of 2015) launched its first phase of the affordable home production. The first phase comprises of 186 units of single storey terrace units with a built up area of 850 square feet with leasehold price ranges from RM180, 000 to RM200, 000 per units. The case study is mainly to demonstrate the effect of price control on supply, though the figures presented are accurate. For the second objective, primary data were collected based survey questionnaire method. The different variables included in the survey were adopted/adapted from literature [11, 12, 13] and the authors' experiences. The survey was administered on a low cost housing estate consisting of 500 units in Pulau Pinang. The levels of their importance are measured on a Likert scale of 1 to 5. Where 1 represents not important and 5 denotes extremely important, 3 denotes important and 2 and 4 fall in between. The housing estate is located in Penang. Each of the low cost housing consists of 2 bedrooms and 1 bathroom with a total built up area of 550 square feet. More than 300 units were surveyed.

3.1. Case study

Figure 3 through an exemplar case study maps what happen to the housing market if the price is not traded on the competitive market. In the affordable housing market, a developer is willing to supply 60 units at the price of RM300, 000 for a unit comprising 3 bedroom and 2 bathrooms; that is at the equilibrium price and quantity, "E". However, supposing the government decides to impose a ceiling price of RM250, 000 at point "k", the developer

will be unable to meet the current supply of 60 units. Rather, she will only supply 48 units at the ceiling price. As there is a ceiling price of RM250, 000, the resultant will be points "j" and "g". Thus, a shortage will arise; and as shortage arises, homeowners vying for the 48th unit will pay at least RM360, 000, because it will then be traded on the black market and due cost of search activity. "Egf" represents value losses by buyers and developers.
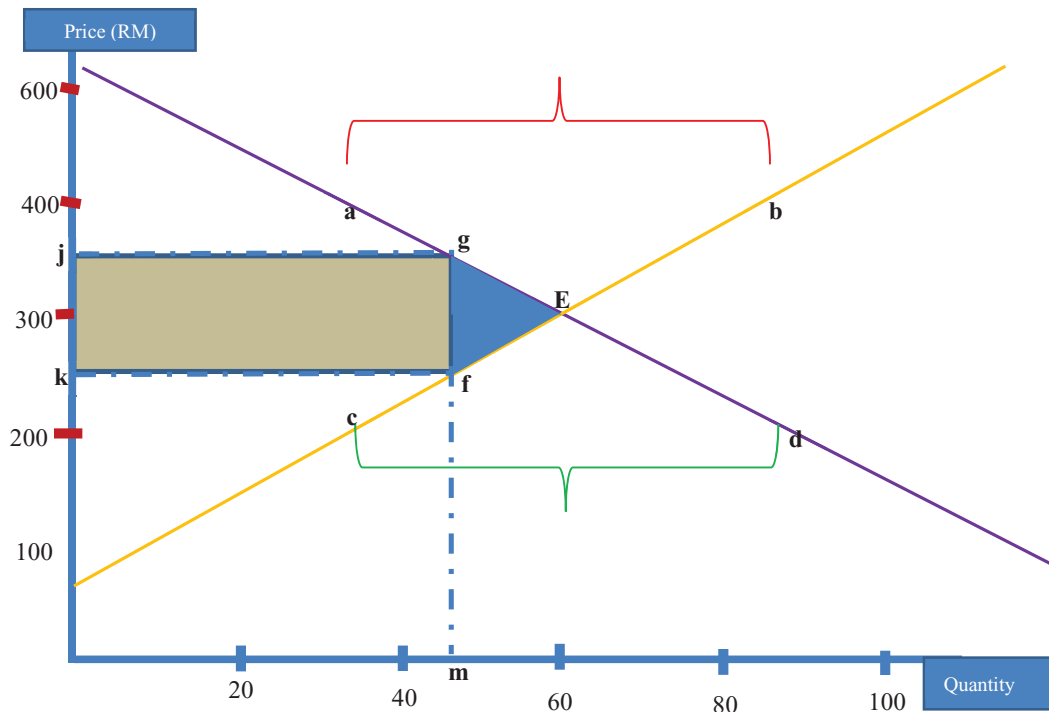

Figure 3. Effect of regulation on housing price and quantity supply

Presented above is a graphical illustration of the affordable housing market operation. Perhaps, in the mainstream economics, there is no argument to this illustration. This will always be the case in a market economy. This scheme is not efficient based on the economic principle of rational thinking. But as argued earlier, housing and affordable housing operations, in particular require government interventions to be 'efficient'. Efficiency in this context may be construed in terms of social benefit. Affordable housing market is not competitive. Competitive market cannot adjust to eliminate either shortage or surplus in the housing market because the market equilibrium model assumes that the homebuyers and developers have adequate information about prices as such can adjust their behaviours. But the developers have more information as compared to the homebuyers. The markets are much disorganized, not competitive and therefore have significant price distortions. In this study, it is not argued that some of inefficiencies do not exist if government perform multiple roles of providing housing directly and providing the enabling environment for the private sector to provide houses based on demand and supply forces, but what is argued, is that, in actual fact, none of the methods of allocating resources are efficient in allocating resources at all time. Here, it is the effective combination of any of the methods after careful analysis of the stakeholder requirements that should be preferred. Furthermore, to the extent that there is no cogent relation between housing affordability and property value, [14] the argument that rent control will lead to housing shortage is weak. The relationship between adequate housing and national productivity is very strong and positive and these are well documented.

3.2. Determinants of affordable housing cost

There are many cost components that determine the costs of any type of buildings. The final cost of finished building should cope with design criteria, including yet the constrained and legislations. However, it should be stressed that, perhaps a suitable approach to determine the cost of housing is to base final housing costs of the resource costs, but the home buyers are more interested in market price, which is the cost of the finished product

after due considerations to the design criteria. The cost of the finished housing is dependent heavily on the other factors outside the building element itself. For an illustration, the same design built in two different locations would have two price tags. However, it would seem that both the contractors and design teams have more adequate information on the building cost determinants, homebuyers could equally have useful information on the determinants and primarily because they determinants the demand criteria to guide them in the choice of suitable houses. Furthermore, this is to the extents that the factors are not resource based cost, this is appropriate. Similar Li, et al [11] have also argued that in determining the cost factors of buildings, production cost as well transaction cost should be collectively considered together for meaningful analysis.

Because of space constraint, the finding will be briefly explained. Most (63.2%) of the respondents were parents. Altogether 71 valid survey forms were returned and analysed for this study. Three percent have no 'formal 'education. The percentage of those with a Diploma or Bachelor degree is 36.6. 85.9% of the surveyed respondents have been residing in their houses for more than five years. 76% of the houses are occupied by more than two occupants and about 19.7% have more than 5 occupants. None of the occupants" family income is less than RM4,000. More than 80% earned between RM6, 000 to RM9, 999. 67.6% of owning their units. The monthly utility bills for some 80% of the respondents exceed RM100 but many pay more than RM300 monthly. From the results, the determinants are both very valid and highly reliable. The KMO also indicates the factors are a very good measure of housing cost and the result is significant (Table 1). The results revealed that the respondents were drawn from the same population or have a similar agreement with the measurements.

The significance (i.e. p- value) of each of the cost factors (H_r: $U>U_0$) show that all the cost factors are significant (Table 2). However, there are some disagreement among the respondents with respect to the government policy (0.156) and workmanship (0.538). For each factor, the null hypothesis was the factor was unimportant (H_0: $U=U_0$) and the research hypothesis was the factor was important (H_r: $U>U_0$). U_0 is the population mean. To this end a 3.5 critical level was assumed. In other words, 70% of the respondents must consider the factor as critical to be considered a cost determinant. Furthermore, the a small standard errors, suggest that the measurements of the homeowners with respects to the motivators are reflections of the population. Therefore, it would be inferred that all the factors are cost determinants. The findings on the determinants are very interesting, albeit not surprising. The average cumulative score for the cost factors was 68%. In others words, some 70% of the surveyed respondents measured that the cost factor require strategic consideration. Meaning that, if these costs are strategically considered, housing costs would be reduced. Specifically, more than 8% of the responding home owners, measured that these factors are extremely important, 40% each measured that factors very important and important respectively. Only about 13% have some mixed-feeling on the measurements of these factors collectively. As may be seen all of the factors will have significant impact on the housing costs. In fact, none of the factors accounts for less than 50% (or 0.5). It was not surprising, that the proximity of the houses to intuitions including schools, place of works, hospitals and markets is the major determining cost of the housing. While the cost of construction and rent is relatively cheaper in the suburb, cost of fuels, energy and access to good schools for children, hospitals, markets often render the saving impractical. The increase in energy costs is impacting negatively on such saving. This is leading to complexities in making choices on where to leave relative to access to basic necessity. In fact, many families spent close to the house rent or mortgage payment on fuel monthly. Therefore, it is reassuring to find that the location (measure in terms of urban or rural) was measured as the third most important cost factor. Those that reside in the cities, though pay high rent and other levies, but the opportunity cost is less in some instance in comparison. The size of the house was also found to have a high bearing on the cost of the housing cost. This is expected either from the traditional cost modeling perspective, though to a less extent the resource based approach. This is due to the effect on quantity factor. About 60% of construction cost is explained by the cost of materials and component. There is a strong correlation between the sizes housing production cost. Therefore, it is not expected that materials are measured as an important cost factor. Cost and availability will not doubt have an impact on housing cost. Buildings are voluminous in nature, and therefore increase in the costs of materials or the unavailability of the materials would impact on its costs. In fact, the traditional cost modeling methods rest heavily on this principle.

Table 1: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO).		0.714
Bartlett's Test of Sphericity	Approx. Chi-Square	563.821
	df	105.000
	Sig.	0.000

Table 2: One-Sample Test

	Test Value = 3.5					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Material	-9.620	70	0.000	-0.89437	-1.0798	-0.7089
Strategic (e.g. school, hospitals, place of job, market, etc.)	-16.483	70	0.000	-1.45775	-1.6341	-1.2814
Location – Urban/Rural	-12.253	70	0.000	-1.24648	-1.4494	-1.0436
Transportation	-5.907	70	0.000	-0.69718	-0.9326	-0.4618
Facilities (eg: Swimming pool, Gym room, Basketball field, Playground & etc.)	-8.253	70	0.000	-.72535	-0.9006	-0.5501
Size of the House	-17.000	70	0.000	-1.38732	-1.5501	-1.2246
Leasehold / Freehold House	-13.420	70	0.000	-1.23239	-1.4156	-1.0492
Layout of the House	-8.046	70	0.000	-0.72535	-0.9052	-0.5455
Workmanship (eg: Finishing)	-.618	70	0.538	-.04930	-0.2083	0.1097
Levy	-3.634	70	0.001	-.27465	-0.4254	-0.1239
Permit Fees	-3.303	70	0.002	-0.26056	-0.4179	-0.1032
Land Acquisition	-4.070	70	0.000	-.45775	-0.6821	-0.2334
Government Policy	-1.434	70	0.156	-0.10563	-0.2525	0.0413
Exchange rate	-7.250	70	0.000	-0.71127	-0.9069	-0.5156

Table 3: One-Sample Statistics

	Std. Deviation	Std. Error Mean	Cronbach's Alpha	Extraction	Mean weightage
Strategic (e.g. school, hospitals, place of work, market etc.)	0.745	0.088	0.735	0.810	0.7916
Size of the House	0.687	0.082	0.713	0.778	0.7775
Location – Urban/Rural	0.857	0.102	0.739	0.774	0.7493
Leasehold / Freehold House	0.774	0.092	0.739	0.838	0.7465
Government Policy	0.621	0.074	0.744	0.788	0.7211
Workmanship (eg: Finishing)	0.672	0.08	0.753	0.703	0.7099
Material	0.783	0.093	0.751	0.631	0.6789
Facilities (eg: Swimming pool, Gym room, Basketball field, Playground & etc.)	0.741	0.088	0.733	0.634	0.6451
Layout of the House	0.76	0.091	0.739	0.734	0.6451
Exchange rate	0.826	0.098	0.746	0.532	0.6423

Table 3: One-Sample Statistics (cont'd)

	Std. Deviation	Std. Error Mean	Cronbach's Alpha	Extraction	Mean weightage
Transportation	0.995	0.118	0.77	0.713	0.6394
Land Acquisition	0.948	0.113	0.731	0.756	0.5916
Levy	0.637	0.076	0.717	0.933	0.5549
Permit Fees	0.665	0.079	0.716	0.907	0.5521

The results further revealed on the major cost factors that determine housing is whether the building owners a have freehold or leasehold interest in the land. This is findings is not very surprising because of leaseholders will not only have to worry about the grant rent on the land, but the land will be reverted back to freeholder on the expiration of the tenure.

4. Concluding remarks

As demonstrated above, if the government sets the rent ceiling below the equilibrium price, it will lead to shortages and increase in rent. In a competitive market, developers are able to maximise profits and minimize their loss by influencing the housing supply and price. They advise the government in providing incentives and/or increasing subsidies to house buyers or to developers. They also advise the government to reduce taxes on construction materials and to relax regulations on migrant labour. They encourage banks to lower interest rates on mortgages. A developer association, as an organised group of housing developers, influences housing prices and rents. Like other private organisations, they are profit-driven; they aim to influence the supply, price, rents, and other conditions of housing delivery. However, to increase homeownership, there is a need for the government to control rent because of the inherent weaknesses in the housing markets. As the findings based on the housing cost determinants government need to create the environments to lower the demand to reside in an area through providing jobs, institutions, recreational facilities in the suburbs.

Acknowledgements

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