

The Effect of Homeownership Externalities on Housing Satisfaction

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Abstract

In order to achieve sustainability in the housing industry in Malaysia, public and private housing providers should regulate their housing activities to suit homeowners needs and wants by examining factors which account for housing satisfaction or dissatisfaction among homeowners. Previous housing studies show that homeowners generally are satisfied with their housing. However, these studies do not explain to what extent homeownership affects housing satisfaction. It is reasonable to believe that the degree of housing satisfaction may depend on types of externalities of homeownership that homeowners are expected to receive. Therefore, this paper intends to fill the gap that currently exists in housing satisfaction literature by developing an understanding on which expected externalities of homeownership contribute to overall satisfaction of home owners in Malaysia. From the analysis, homeownership externalities, as defined by social capital investment, household stability and local amenities investment, appear to affect the level of housing satisfaction.

Keywords: Sustainability, Housing Satisfaction, Homeownership, Externalities

INTRODUCTION

Meeting housing needs has long been an objective of the national housing policy in Malaysia. Despite efforts by public and private sectors, there are various problems and issues relating to the housing delivery system in the country. First, public and private sectors have been giving low priority to the low-cost housing program. The completed low-cost houses fall below the targeted level. On the other hand, the construction of medium- and high-cost housing by both sectors has exceeded targeted level during the Malaysian plans (Malaysia, 1986; Malaysia, 1991; Malaysia, 1996; Malaysia, 2001; Malaysia, 2006). Second, a massive over construction of medium- and high-cost housing has contributed to the problem of property overhang (Ministry of Finance's Valuation and Property Service Department, 2009). The majority of overhang units remain unsold for reasons beyond the price factor, ranging from poor location to unattractive houses with lack of adequate amenities and facilities (Tan, 2008). These unsold houses do not attract the target market and cater to the housing needs of the targeted house buyers. Another issue that undermines the success of meeting housing needs is the problem of abandoned housing projects (Ministry of Finance's Valuation and Property Service Department, 2009). Owning a house is every person's dream, but their dreams have turned into nightmares after the homes they bought are left uncompleted. There is also clear evidence that house owners face the problems created by errant house builders. The problems range from the irritating ones like leaking roofs and uneven flooring to the serious ones like sub-standard house quality and unpleasant neighborhoods.

In order to achieve sustainability in the housing industry in Malaysia, public and private sectors should regulate their housing activities to suit households' needs and wants. One way to meet households' housing needs is to examine factors which account for housing satisfaction or dissatisfaction among homeowners. Housing satisfaction is recognized as an

important component of home owners' general quality of life (Adam, 1984). The degree to which home owners' needs and aspirations are met by their housing conditions is a concern for housing developers. Measures of housing satisfaction provide necessary information to evaluate the performance and success of the current and future housing projects (Preiser, 1989; Natham, 1995). Thus, the result of this study would assist housing developers in understanding and predicting of the overall satisfaction of their housing development projects.

Previous studies focused on the relationship between homeownership and housing satisfaction and test whether homeowners are satisfied with their housing and neighborhood conditions. Majority of the studies show that homeowners generally are satisfied with their housing. However, these studies do not explain to what extent homeownership affects housing satisfaction. It is reasonable to believe that the degree of housing satisfaction may depend on types of externalities of homeownership that homeowners are expected to receive. Therefore, this paper intends to fill the gap that currently exists in housing satisfaction literature by developing an understanding on which expected externalities of homeownership contribute to overall satisfaction of home owners in Malaysia.

LITERATURE REVIEWS

Measuring the level of housing satisfaction and its determinants have become an important matter to researchers, marketers, house builders and government agencies, and it is generally accepted as a key health resource and an important determinant of overall quality of life (Lu, 1999; Baiden et al., 2010). Housing planners and policy makers strive to provide housing that meets the need of the residents and thus contributes to their quality of life (Lu, 1999; Baiden et al., 2010) and housing satisfaction has been used as an ad hoc evaluative measure for judging the success of housing developments constructed by public and private housing developers.

Increasing interest is shown towards the study of how households think of their housing and how it affects their lives. Households make their judgments on housing and neighborhood condition based on their needs and aspirations (Galster, 1987). Satisfaction with their housing and neighborhood conditions indicate a high degree of congruence between actual and desired situations. An incongruity between housing needs and aspirations may lead to dissatisfaction.

Most housing studies show that housing tenure (homeownership) appears to be a significant factor of housing satisfaction. However, these studies do not explain to what extent homeownership affects housing satisfaction. It is reasonable to believe the level of housing satisfaction may depend on expected types of homeownership externalities of homeowners. As defined by Gans et al., (2005), positive externalities are benefits that fall on others that are not directly involved in a transaction. Households choose to be homeowners because they see a favorable combination of what is important to them and what they expect as a reward or benefit.

Previous studies seem to confirm positive externalities from homeownership. For example, homeownership creates a positive externality in that homeowners are believed to be more likely to participate in local neighborhood and improvement organizations (local amenities investment). Political activism among homeowners has obviously caused positive externalities for other homeowners who can freely ride on others' efforts to make the

neighborhood a better place to live in. There are reasons to explain why homeowners are more likely to participate in voluntary and local political organizations. It is found that participation in local improvement organizations is able to ward off outside threats by both public and private entities and inside threats such as poor property maintenance by homeowners as a mean of protecting their properties (Rohe and Steward, 1996). Although there are no specific studies in literatures that examine the effect of local amenities investment on housing satisfaction, the argument seems to be that increased local amenities investment in the neighborhood may lead to higher housing satisfaction as homeowners will benefit both economically and socially if these types of neighborhood organization attachments are successful. Local improvement organizations, such as residential associations will perform their duties to solve the problems of negative externalities on their housing and neighborhood conditions.

Previous studies also found that homeownership creates a positive externality in that homeowners are more likely to improve homeowners' connection to their neighbors (social capital investment). Social ties with neighbors living nearby may mitigate neighborhood instability and promote neighborhood cohesion by encouraging households to stay as they can derive financial and emotional support from its social networks (Kan, 2007). There is little evidence about the relationship between social capital investment and housing satisfaction. Vera-Toscano and Alteca-Amestoy (2008) have shown that homeowners evaluate their housing situation based on social interaction with others in Spain. It is reasonable to assume that social capital investment may enhance the positive effects of homeownership on housing satisfaction. Housing is more than just bricks and mortar and it is the building block of a community, and the community builds a common stock of social relationships. Homeowners are able to reach a desired social status by communicating with others in the social connection as this can promote self-esteem among homeowners (Rohe and Stegman, 1994).

Homeowners may receive benefits when others stay in the neighborhood longer (household stability). According to Rohe and Steward (1996), homeowners are generally committed to remaining in a neighborhood for a long time as transaction costs associated with buying and selling houses are relatively high. Buying a house involves a lot of transaction costs such as legal fees, stamp duty and mortgage processing fees, as well as hidden costs such as the time it takes to find the right house. Households choose to be homeowners only when they are reasonably sure that they will not incur such costs again for a long time. As a result, homeownership is often thought to promote the stability in the neighborhood. Furthermore, increased length of tenure in the neighborhood will encourage investment in community by participating in social networks and local improvement organizations. Homeowners will consume the benefits of community over a longer time period when they stay in their communities. Given the reduced mobility that homeowners possessed, it is reasonable to believe that duration of residence is a predictor of housing satisfaction.

Households seem to be willing to pay more to live around homeowners as homeownership appears to increase home maintenance. Rohe and Steward (1996) explained that homeowners are more likely to invest in their property maintenance and improvement at a higher standard as this improvement could be reflected in the form of higher property values. Furthermore, this improvement can be capitalized into the value of their homes at the time of sale. As a result, good property maintenance will provide positive externalities to others as it may have some positive cumulative influence on the value of all properties in the neighborhood (property value). It has become important to consider homeownership as an investment for

which home owners will receive attractive and positive financial returns. As pointed by Hutchison (1994), property values tend to appreciate over a longer period of time and the income yield is higher than those from other forms of investment, such as shares or bonds. Owning a house is also proved to be an effective instrument to hedge against inflation as compared to other assets (Fama and Schewert, 1977; Rubens et al., 1989; Bond and Seiler, 1998). There is little empirical evidence to support the claim that property value of homeownership has positive effects on housing satisfaction. However, it is reasonable to assume that housing satisfaction might be expected to rise with higher property value and appreciation.

In order to assess the relationship between housing satisfaction and homeownership, several determinants of housing satisfaction are used as control variables in this study. Most empirical studies have identified a number of important determinants of housing satisfaction, such as housing and neighborhood characteristics and the socio-economic status of households. Housing and neighborhood characteristics can be measured through objective and subjective attributes of housing (Francescato et al., 1989; Wiedemann and Anderson, 1985). Objective measures refer to the evaluation of the physical characteristics, facilities, services and environment, whereas subjective measures refer to perception, emotions, attitudes, and also intention towards the housing attributes (Mohit et al., 2009). Most housing satisfaction studies have integrated both objective and subjective attributes of housing for the assessment of housing satisfaction.

Savasdosara et al., (1989) found that friendly and helpful neighbors, public facilities such as recreational facilities and parking space, environmental conditions such as cleanliness, and housing and location characteristics are important considerations to the formation of housing satisfaction of 1100 households in Bangkok. Lu (1999) reported that housing and locational variables have significant effects on housing satisfaction using the data from the 1989 American Housing Survey. Elsinga and Hoekstra (2005), using eight EU countries data from the European Community Household and Panel (ECHP), found that housing quality is an important determinant of housing satisfaction. Their results also show that the housing quality index and the subjective perception of the dwelling size have the largest influence on housing satisfaction. Salleh (2008) found that the dwelling unit factor (area of the dining, kitchen and living room), the neighborhood factor relating to educational facilities, the neighborhood factor relating to security infrastructure (police, parking lot, fire brigade, facilities for the handicapped) and the neighborhood factor relating to central facilities (telephone, market, public transport) are the most important determinant of housing satisfaction among residents in private low cost housing in Malaysia.

Similar findings in Spain were reported by Vera-Toscano and Alteca-Amestoy (2008) using the survey on Living Condition and Poverty, housing quality, the space available in the house, locational and neighborhood characteristics are significantly associated with housing satisfaction. Amole (2009), by analyzing 1124 Nigerian universities students, showed that the morphological configuration emerges as a significant predictor of housing satisfaction. As for subjective variables, higher social and place qualities of bedroom, and lower social densities in the hall contribute to high level of satisfaction.

In addition to housing and neighborhood determinants, households' socio-demographic must be taken into consideration in evaluating housing satisfaction. Empirical studies have identified a number of important households' socio-demographic determinants of housing

satisfaction, such as age, educational attainment, income, and life cycle changes (Lu, 1999; Amole, 2009).

Among the individual and household socio-demographic characteristics, age shows a positive effect (Morris and Winter, 1975; Rogers and Nikkel, 1979; Galster and Hesser, 1981; Lu, 1999). Older people tend to be more satisfied with their dwelling than do younger people, *ceteris paribus*. However, a study by Mohit et al (2009) indicated that older age of the households is negatively related to housing satisfaction.

Previous works by Galster and Hesser (1981), Morris and Winter (1975), Rogers and Nikkel (1979), Lu (1999), and Vera-Toscano and Alteca-Amestoy (2008) indicated that higher income households are generally satisfied with their housing conditions and neighborhood. Similarly, the higher the education level of the heads of the household, the more satisfied they are with their housing as compared to household heads with lower educational attainment (Vera-Toscano and Alteca-Amestoy, 2008). However, Lu (1999) found that education appears to have insignificant effects on housing satisfaction.

METHODOLOGY

In order to examine the relationship between homeownership externalities and housing satisfaction, a series of statistical techniques are performed. First, Exploratory Factor Analysis and Reliability Analysis via Cronbach's alpha are used to measure constructs with multiple indicator variable as well as the internal consistency of variables in the study. Confirmatory factor analysis is then conducted to assign variables to manifest a construct. The strength of the manifestation is measured by factor loadings in the complex factor structures. Once the constructs are identified, regression analysis is performed to estimate the coefficients of homeownership externalities, as well as housing, neighborhood and households' socio-demographic determinants on housing satisfaction.

Model

Housing satisfaction (HS) in this study is assumed to be affected by homeownership externalities, as defined by local amenities investment (LCI), social capital investment (SCI), household stability (S), and property values (PV). Additionally, there are many housing, neighborhood and locational attributes (HN), and household socio-demographic characteristics (D) that could affect housing satisfaction. A functional relationship between them can be developed and represented by:

$$HS_i = f(LCI_i, SCI_i, S_i, PV_i, HN_i, D_i)$$

Survey

The sampling frame of this study is a complete list of all householders in Malaysia. According to Department of Statistics Malaysia (2000), there were 4.9 million householders in Malaysia. However, a list of householders is not available to the researcher, so samples are selected from a series of steps. First, an area sample is used to interview homeowners from Kuala Lumpur and Selangor. These two states are selected in this study because the total number of these households accounted for 31% of overall households in the country (Department of Statistics Malaysia, 2000). Second, districts within these two states are chosen to ensure that different areas are represented in the sample. There are 8 districts in these two states, namely Gombak, Klang, Petaling, Hulu Langat, Kepong, Cheras, KL city

and Wangsa Maju. In this study, Cheras and KL City in Kuala Lumpur and Klang and Petaling in Selangor were chosen as these 4 districts are the most populated districts (Department of Statistics Malaysia, 2000). As a final step, householders within these 4 districts are interviewed by using stratified sampling. Stratification was based on house types. Terrace house are the most popular types, followed by high-rise and semi-detached and detached houses. The interviews are conducted in identified residential areas near major retailing centers in each district. In this survey, 100 households within each district are chosen. In total, 400 copies of survey forms are being distributed to respondents. Out of 400 copies of survey forms, 269 forms are returned. However, 19 of them are discarded due to missing information in the survey forms.

Variables Used in this Study

All questions used in the survey are guided by the literature review pertaining to externalities and housing satisfaction with slight modifications from the works of Francescato et al (1989), Rohe and Steward (1996), Rossi and Weber (1996), DiPasquale and Glaeser (1999), Evan et al., (2000), Amole (2009), and Tan (2008). In this survey, responses are scored on a five-point scale ranging from 1 for “strongly disagree”, 2 for “disagree”, 3 for “neutral”, 4 for “agree” and 5 for “strongly agree”. There are:

- Social Capital Investment (SC): 7 items (Cronbach’s alpha = 0.856);
- Property Values (PV): 6 items (Cronbach’s alpha = 0.849);
- Local Amenities Investment (LA): 4 items (Cronbach’s alpha = 0.839);
- Household Stability (S): 3 items (Cronbach’s alpha = 0.760);
- Housing Satisfaction (HS): 4 items (Cronbach’s alpha = 0.715).

The effects of externalities on housing satisfaction may tend to vary by house types, property types, and life cycle attributes. Therefore, a host of control variables is included in this study. These include housing and neighborhood attributes (landed property, gated-guarded property, freehold property, number of EPF withdrawal for house purchase and monthly housing expenditure), locational attributes (distance to the workplace, retailing outlets, the hospital, and sport centers), and socio-demographic characteristics (tenure, marital status, income, age, and education). The relative prices of dwelling are also included in this study, and the estimation of these implicit prices can be done by regression market values of house price as a function of various housing attributes. Besides, some relationships are expected between housing satisfaction with a 10-90 housing buying system, and the imposition of real property gain tax (RPGT).

The government should be sensitive to the problems faced by house buyers caused by errant and irresponsible housing developers who have abandoned their projects. One measure to address this problem is to change the house buying system from a progressive system to a 10-90 system. The progressive payment system offers no protection to failed projects and financially unsound housing developer as house buyers are saddled with housing loans that are partially disbursed and for which they have to continuously pay interests. In the 10-90 system, buyers sign the Sale & Purchase Agreement and pay a deposit of 10% of the selling price. They do not make any more payment until the houses are completed with the certificate of completion and compliance, availability of water and electricity as well as vacant possession with keys. There is no empirical evidence to assess whether the 10-90 system will contribute to higher housing satisfaction of homeowners. Thus, this research is undertaken to examine the relationship between the 10-90 house buying system and housing satisfaction.

The effect of the real property gain tax (RPGT) on housing satisfaction is also taken into consideration. The RPGT was originally abolished in 2007, but the reintroduction of RPGT in Budget 2010 has caught some by surprise. Effective from 1 Jan 2010, gains rising from property disposal within the first five years are subject to five percent tax (Phun 2010). Although there is no empirical study being conducted to investigate the effect of RPGT on housing satisfaction in Malaysia, it is reasonable to believe that the five percent RPGT contribute to lower housing satisfaction among Malaysian homeowners.

Table 1 shows the summary and definition of control variables included in this study

Housing, neighborhood and locational characteristics		
<i>Variables</i>	<i>Descriptive</i>	<i>Mean (%)</i>
Landed	1 if you own a landed property; 0 otherwise	0.8587
G & G	1 if you own gated-guarded property; 0 otherwise	0.4647
Freehold	1 if you own freehold property	0.6022
Price	Market Price (RM 000)	520.798
EPF	1 if you have withdrawn EPF funds for home purchase; 0 otherwise	0.5279
S10-90	1 if you prefer 10-90 buying system; 0 otherwise	0.6952
RPGT	1 if the imposition of the 5% Real Property Gain Tax (RPGT) starting from 1 Jan 2010 will not discourage me from buying property; 0 otherwise	0.6097
Workplace	1 if the distance to the workplace is less than 5 km; 0 otherwise	0.5019
Retailing	1 if the distance to retailing outlets is less than 5 km; 0 otherwise	0.5613
Hospital	1 if the distance to the hospital is less than 5 km; 0 otherwise	0.5130
Sport	1 if the distance to sport and recreation centers is less than 5 km; 0 otherwise	0.5130
Households' socio-demographic characteristics		
H.Exp	1 if your monthly housing expense is more than RM 2500; 0 otherwise	0.1933
Own	1 if you are owner; 0 otherwise	0.7600
Married	1 if you are married; 0 otherwise	0.7063
< RM 2500	Monthly income < RM 2500 (Reference Group)	0.5193
RM 2500 – RM 4000	Monthly income RM 2500 – RM 4000	0.2602
RM 4000 – RM 8000	Monthly income RM 4000 – RM 8000	0.3383
> RM 8000	Monthly income > RM 8000	0.1822
Age < 30	Age of the respondents in years	0.2491
Age 30 – 50	Age of the respondents in years	0.5613
Age > 50	Age of the respondents in years (Reference Group)	0.1896
Primary	Primary education	0.0149
Secondary	Secondary education (Reference Group)	0.2453
Tertiary	Tertiary education	0.7398

RESULTS AND DISCUSSION

There is a clear implication that the latent variables of respective hypothetical concepts are converged in their respective factors. The results in the matrix are consistent with the literature. As reported in Table 2, the indicators are then confirmed to manifest a specific

factor, now called a construct, where the factor loadings are the highest. Indicators are then omitted from further analysis if they do not show a unique manifestation of a single factor.

In this survey, construct 1 is associated with social capital investment. Four social capital investment items are grouped into a single construct that include the following item: “I socialize with my neighbors”, “My neighbors are friendly”, “My neighbors are helpful”, and “My neighbors look after my property when I am away” with factor loadings of 0.720, 0.770, 0.700, and 0.688 respectively.

Construct 2 consists of items relating to property value of homeownership. This construct is based on five items: “Owning a well-maintained house has the potential for income gains” with a loading of 0.800, “Owning a well-maintained house has the potential for capital gains” with a loading of 0.890, “Owning a well-maintained house is a good investment to hedge against inflation” with a loading 0.797, “Owning a well-maintained house is a good investment for retirement” with a loading of 0.783, and “Owning a well-maintained house is a good investment for children education” with a loading 0.676.

As indicated in Table 2, construct 3 comprises four survey items regarding local amenities investment, namely “I have participated in the local community project” with a loading of 0.761, “I am a member of residential association” with a loading of 0.779, “I contribute time and efforts to improve my neighborhood” with a loading of 0.819, and “I involve in local improvement groups” with a loading of 0.849.

The results of previous studies show that the length of stay is related to neighborhood stability, which is also corroborated by this study. In this study, household stability of homeownership (construct 4) is based on three items: “I stay in the neighborhood longer due to my neighbors” with a loading of 0.687, “I stay in the neighborhood longer due to amenities” with a loading of 0.814, and “I stay in the neighborhood longer due to high relocation costs” with a loading of 0.691.

It is common to use several highly correlated questions rather than a single-question to measure housing satisfaction. In this case, housing satisfaction construct is based on the following items: “I intend to buy another property in the same neighborhood”, and “I will recommend my friends/ relative to move into my neighborhood” with factor loadings of 0.653 and 0.644 respectively.

Table 2: Confirmatory Factor Analysis

	Factors				
	1	2	3	4	5
Construct 1: Social Capital Investment (SC)					
SC1: I socialize with my neighbors	.720				
SC2: My neighbors are friendly	.770				
SC3: My neighbors are helpful	.700				
SC4: My neighbors look after my property when I am away	.688				
Construct 2: Property Value (PV)					
PA1: Owning a well-maintained house has the potential for income gains		.800			
PA2: Owning a well-maintained house has the potential		.809			

for capital gains					
PA3: Owning a well-maintained house is a good investment to hedge against inflation		.797			
PA4: Owning a well-maintained house is a good investment for retirement		.783			
PA5: Owning a well-maintained house is a good investment for children education		.676			
Construct 3: Local Amenities Investment (LA)					
LA1: I have participated in the local community projects		.761			
LA2: I am a member of residential association		.779			
LA3: I contribute time and efforts to improve my neighborhood		.819			
LA4: I involve in local improvement groups in my neighborhood		.849			
Construct 4: Household Stability (S)					
S1: I stay in the neighborhood longer due to my neighbors			.687		
S2: I stay in the neighborhood longer due to amenities			.814		
S3: I stay in the neighborhood longer due to high relocation costs			.691		
Construct 5: Housing Satisfaction (HS)					
HS1: I intend to buy another property in the same neighborhood					.653
HS2: I will recommend my friends to move into my neighborhood					.644

Results that are obtained from the factor analysis subsequently led to the construction of five composite indices, representing various aspects of homeownership externalities and housing satisfaction. All the variables which have been identified as having the same underlying pattern are grouped together to construct an index. The index value is computed as an average score of values for all the variables included in each construct.

Table 3 presents results of the partial effect of each determinant on housing satisfaction with and without controlling for the effects of housing, neighborhood, and socio-demographic attributes. 2 equations are presented in the regression analysis. The first equation is solely based on the impacts of homeownership externalities on housing satisfaction without taking control variables into consideration. Housing, neighborhood and household's socio-demographic variables that are present with housing satisfaction are included in the second equation as control variables to examine the effect of homeownership externalities on housing satisfaction. The second equation seems to be more appropriate for discussion as there is no specification error as Ramsey RESET was performed to test for specification in the model ($p = 0.1188$, do not reject H_0 =no specification error). Therefore, only their results in equation 2 will be examined in details in the following analysis.

Homeownership Externalities

The results in Table 3 reveal that social capital investment is significantly and positively related to housing satisfaction at the 0.01 level. In line with the findings of Vera-Toscana and Alteca-Amestoy (2008), these results may suggest that households in this survey evaluate their housing satisfaction based on social interaction with others from the same neighborhood. As indicated earlier, households are able to reach a desired social status by

communicating and interacting with their neighbour and friends. They are also able to derive supports from their social networks emotionally and financially. As a result, this externality of home owning may contribute to higher housing satisfaction among homeowners.

Household stability is also significantly and positively associated with housing satisfaction. Similar to previous findings, the longer the households stay the more satisfied they become. As explained by Amerigo and Aragones (1997) and Amole (2009), this is usually attributed to the tendency of households conforming or adapting to their housing and residential environment over time, and consequently reporting a high level of satisfaction towards their housing and neighbourhood conditions.

As expected, positive and significant relationships are reported on the impact of local amenities investment on housing satisfaction. It appears that the active involvement in local improvement groups in the neighborhood may contribute to higher housing satisfaction among homeowners. It is due to the fact that the equity homeowners have in their home is affected by conditions in the surrounding neighborhood, thus homeowners work to influence these conditions through participating in local amenities investment.

However, this study does not support the hypotheses that property value of homeownership is significantly related to housing satisfaction. The most likely explanation for this insignificant relationship is that purchasing a home is the largest investment that most families will ever make. Unlike property investors, homeowners generally purchase their properties for own stay. They rather show a deeper commitment and greater satisfaction with the neighborhood, and they are directly linked with the surrounding area they live. The higher property value appreciation may not manifest itself in greater housing satisfaction among homeowners.

Housing, Neighborhood, and Locational Attributes

As shown in the survey, homeowners who live in a gated-guarded neighborhood are 1.27 times ($e^{0.239}$) more likely to be satisfied with their housing and neighborhood situations as compared to homeowners who do not live in a gated-guarded neighborhood holding all other things constant. They generally prefer to live in the gated and guarded neighborhood because such neighborhood offers recreational facilities and landscaped lung spaces. Additionally, houses in the gated and guarded neighborhood tend to have higher price tag than similar houses outside of gates as house buyers are willing to pay 18.1% more to live in such neighborhood with the landscaped compound (Tan, 2011). Additionally, owning the gated-guarded property is not only for those who would like to deal with security issue in the neighborhood, but also it is for those who plan to stay in the neighborhood for a long time as higher costs associated with buying the gated-guarded property (Tan, 2010).

Similarly, homeowners who own freehold properties are 1.23 times ($e^{0.203}$) more likely than homeowners who own leasehold properties to be satisfied with their housing and neighborhood conditions. They favor freehold properties rather than leasehold properties because they own everything that is on the land for life (Tan, 2011). Additionally, they generally stay in their present homes longer as there is no time limit for them until they transfer it to someone else. Given the reduced mobility that households possess, they are more likely to associate with their neighbors and to participate in local improvement organizations to increase the attractiveness of the neighborhood which may result in higher housing satisfaction.

It is generally believed that homeowners of landed properties are more likely to be satisfied with their housing situations. As pointed by Glaeser and Sacerdote (2000), homeowners of landed property types, particularly single-family detached dwelling make better citizen by involving in local amenities investment as they have more connection to surrounding local services. However, this survey shows that property type (landed property) is not a significant predictor of housing satisfaction.

In line with previous studies, the price of dwelling units has found to affect housing satisfaction. As expected, the higher the price of home households pay, the more likely they are satisfied. This is due the fact that high house prices are associated with better quality housing (Lu, 1999).

As shown in Table 3, EPF withdrawal seems to be an important predictor of housing satisfaction, assuming all other factors constant. Homeowners who have withdrawn EPF funds for home purchase are 1.23 ($e^{0.210}$) times more satisfied with their housing situations as compared to homeowners who have not withdrawn EPF for home financing. Meeting housing needs for all requires affordable housing financing. The government should increase the availability of alternative home financing by liberalizing EPF withdrawal for down payment and mortgage payment.

Based on the findings of the locational attributes, homeowners are only satisfied with the house that is situated within 5 km from the workplace. It is reasonable to believe that long distance to the work place means incurring more travelling time and cost. However, the results show that the distance to retailing center, to the hospital, and to sport centers are statistically insignificant differ from housing satisfaction.

According to this survey, homeowners are generally more satisfied ($e^{0.342} = 1.41$ times) if they are given an opportunity to purchase their homes using the 10-90 system to avoid failed and abandoned housing development projects. The government should provide incentives to housing developers to adopt the new house buying system to phase out the progressive payment system. The quality of houses may be improved with the implementation of the 10-90 system because developers will not risk the likelihood of dispute with buyers over quality during vacant possession. Presently buyers having paid up 95% prior to hand over time, have little or no bargaining power over the quality of their houses. With the 10-90 concept developers have to seriously focus more on building better quality houses and executing greater care and responsibilities in ensuring that the houses are constructed in accordance with specification and proper workmanship.

There was some apprehension on the announcement of the RPGT being imposed again. However, the impact of the reimposition of 5 percent real property gain tax (RPGT) on housing satisfaction is not statistically significant, indicating the 5 percent tax rate will not significantly affect housing satisfaction in the survey.

Household Characteristics

As expected, housing satisfaction is much higher among homeowners compare to renters. Among household socio-demographic characteristic, only age shows significant effect on housing satisfaction, all other thing being equal. The abundant studies that have employed housing satisfaction models tend to indicate that household income, marital status, education background, and monthly housing expenditure appear to be significant determinants to

explain the difference in the assessment of housing conditions. Based on this survey, income and life cycle changes are not important determinants of housing satisfaction. As argued by Lu (1999), these inconsistencies in empirical findings may be explained by the fact that specific groups of people may evaluate similar housing and neighborhood situations differently due to their own housing needs and neighborhood preferences.

Table 3 Regression Analysis

	Equation 1		Equation 2	
	B	t	B	t
(Constant)	.690*	2.212	-3.107**	-3.621
SCI	.330**	5.053	.245**	4.565
PV	-.028	-.390	.004	.068
LAI	.250**	4.424	.097*	2.148
S	.230**	3.645	.107*	2.175
Landed			.188	1.886
G&G			.239**	3.089
Freehold			.203**	2.653
Price			.625**	4.252
EPF			.210**	2.901
Work			.190**	2.625
Retail			-.060	-.667
Hospital			-.083	-.917
Sport			-.049	-.656
S10-90			.342**	4.207
RPGT			-.005	-.067
H. Exp			-.072	-.835
Owner			.275**	2.410
Age < 30			.342**	2.824
Age 30 - 50			.255**	2.803
Primary			.032	.120
Tertiary			.033	.406
Married			-.010	-.119
(RM) 2500 - 4000			-.092	-.958
(RM) 4000 - 8000			-.079	-.834
> (RM) 8000			.151	1.271
R square	.362		.682	
Adj R square	.352		.651	
Std error estimate	.67186		.49333	
F	37.425		21.805	

** significant at the 0.01 level; * significant at the 0.05 level

CONCLUSION

Meeting housing needs is an important objective in the country's social and economic development goals. Malaysian housing policies are developed in such a way that adequate, affordable and accessible houses are provided to all levels of society. However, the efficiency

and effectiveness of housing provision to meet their housing needs requires a careful estimation of determinants of housing satisfaction as different households have different perception of housing satisfaction based on their requirements and needs.

Results from previous studies show a strong statistical correlation between homeownership and housing satisfaction. Housing satisfaction is much higher among homeowners compared to renters. Even with similar quality of housing units, homeowners are likely to be more satisfied than renters due to the fact that homeownership makes them psychologically proud (Kaitilla, 1993). However, these relationships may be spurious because the degree of housing satisfaction may depend on the types of positive externalities of home owning that homeowners are expected to receive.

To measure whether expected homeownership externalities matter, this paper includes social capital investment, local amenities investment, household stability, and property value of homeownership. Households choose to be homeowners because they would like to benefit from investing in the relationships by socializing and interacting with their neighbors and friends (social capital investment), improving the quality of neighborhood by participating local improvement groups (local amenities investment), increasing property value by investing in a well-maintained housing (property values), and consuming the benefits of community over a long time by remaining in a neighborhood longer (household stability).

From the analysis, externalities of homeownership, as defined by social capital investment, household stability and local amenities investment, appear to enhance the relationship between homeownership and housing satisfaction. It may suggest that some of the effects of homeownership on housing satisfaction may be attributed to these positive externalities of homeownership in which homeowners are expected to receive. However, this study does not support the hypotheses where the higher the property appreciation, the more likely homeowners are satisfied. These insignificant relationships may be attributable to the fact that there seem to be other expected externalities that may significantly explain households' housing satisfaction variance more significantly.

Additionally, some housing and demographic determinants are found to be significant in this study. These include age of the household, housing tenure, land tenure (freehold), gated-guarded property, price of owning, EPF withdrawal, and proximity to the workplace.

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