

## **UNDERSTANDING FACTORS THAT INFLUENCE HOUSE PURCHASE INTENTION AMONG CONSUMERS IN KOTA KINABALU : AN APPLICATION OF BUYER BEHAVIOR MODEL THEORY**

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### **Abstract**

Houses made ready by housing developers in Sabah are solely based on economic factors as oppose to consumers preferences and interest. A better understanding of factors contributing to decision-making of buyers in real estate markets would be beneficial to both buyers and housing industry. Therefore, this study aims to understand consumer behaviour towards house purchase using The Theory of Buyer Behaviour Model (Perceptual and Output). The perceptual constructs consist of housing attributes such as house features, living space, distance and environment. The output construct refers to house purchase intention. Exogenous variables of the model are superstition-numbers, superstition-ghosts, developer brand and financing. The objective of this study is to examine the influence of housing attributes on house purchase intention. Based on 235 working adult respondents, findings indicated that house features, financing, distance, environment and superstition-numbers have significant positive relationships with house purchase intention. In addition, implications of the studies for several stakeholders are also discussed.

**Keywords:** *Housing Attributes, Theory of Buyer Behavior Model, House Purchase Intention, Sabah*

### **1.0 Introduction**

According to McCarthy and Perreault (1993), business practices had been steadily evolved through several critical stages: simple trade era, production era, sales era, marketing department era, and finally the marketing company era of today. Importantly, they asserted that consumer needs were acknowledged especially during the marketing company era. However, this was not apparent in housing industry whereby much of its business practices still remained in the production era at the expense of consumer preference.

MacLennan (2002) emphasized that economists have characterized housing as a bundle of attributes. Some of these attributes are derived from the internal characteristics of the house unit itself such as the rooms available, whilst examples of external are location, accessibility to utilities, services and facilities. In the UK, it was found that very little research had been carried out to understand on consumers needs and wants in regards to housing preferences and interest (Mills, 2000). This has led to a gap between consumers' expectations and developers' perceptions which resulted in customer dissatisfaction (Swartz and Brown, 1989). Hence, Ozaki (2002) has made a call for researchers to focus on this issue and simultaneously bridging the gaps between consumers and housing developer. It is therefore imperative to investigate consumer perceptions particularly on various factors influencing their

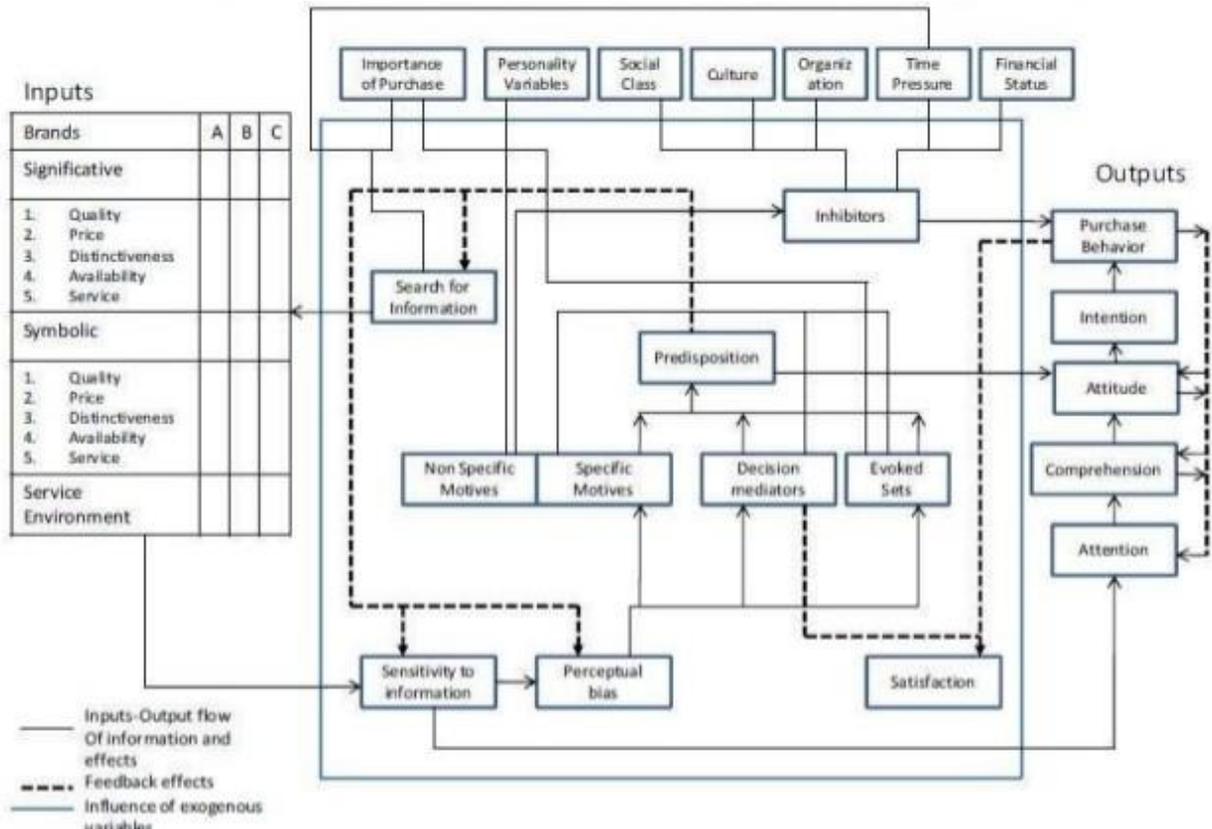
buying behaviour. This is important since this study may provide crucial insight for real estate developers to satisfy the needs and wants of their customers (Daly, Gronow, Jenkins and Plimmer, 2003; Gibler and Nelson, 2003; Opoku and Abdul-Muhmin, 2010).

In local context, particularly in Sabah, the report by C H Williams Talhar and Wong (2015) on housing market in Kota Kinabalu confirmed the existence of gaps between sellers' expectations and purchasers' ability. In other words, there are gaps between house buyers' expectations and the product attributes provided by housing developers. Apparently, this gap has resulted in consumer's dissatisfaction when they were not pleased with their house purchase. Consequently, the developers would be affected when they were getting less profit from less than optimal selling prices. In addition, based on the same report mentioned above, it seemed that the local housing developers have not been making adequate effort to execute gap analysis to better understand consumers' real needs and preferences in terms of housing. It appears that their business practices are still based on producer convenience instead of consumer focus. Even though a number of studies have been done to understand the actual needs preferences of house buyers in Kota Kinabalu Sabah, these studies could be based purely on economic reasons such as pricing and speculations or they may be more complex and sophisticated. Significantly, consumer behaviour theories may be applicable to further understand consumer behaviour towards purchasing a house, besides focusing on economic theories. Therefore, this present study aims to examine whether the factors namely house features, living space, financing, distance, environment, superstition numbers and ghost, and developer brand that could influence consumer's behaviour to purchase a house in Kota Kinabalu, Sabah.

## **2.0 Literature Review**

### **2.1 Theory of Buyer Behavior Model**

Gibler and Nelson (1998) pointed out that most previous real estate studies had been based on neoclassical economics, where consumers were expected to make real estate decisions that maximize their utility and wealth given price and income constraints. Tastes and preferences were taken as given. The outcomes of consumer actions were used to infer these preferences. They then suggested that the study of real estate would benefit from an expansion to include consumer behaviour concepts from sociology and psychology as synthesized through marketing. Inclusion of these concepts in real estate education would help real estate analysts better explain and predict the behaviour of decision-makers in real estate markets. The paper presented a review of the consumer behaviour literature relevant to real estate and suggested on how these concepts could expand real estate study. The Theory of Buyer Behaviour Model (Howard and Sheth, 1973) is as shown in Figure 2.1 below.



**Figure 2.1 :** Theory of Buyer Behaviour Model (Howard & Sheth 1973, Loudon & Della Bitta, 1993)

According to the theory, where the Hypothetical Constructs (or Intervening Variables) can be classified into two categories: those described as Perceptual Constructs, and those described as Learning Constructs. Perceptual constructs include: Sensitivity to information (the degree to which the buyer controls the flow of stimulus information), Perceptual bias (distortion or alteration of the information received due to the consumers fitting of new information into his or her existing mental set), Search for information (the active seeking of information on consumption choices). Through these combination, Perceptual Constructs serve to control, filter and process the stimuli that are received. Drawing heavily on Learning Theory Concepts (Loudon & Della Bitta, 1993), the Learning Constructs include: Motive (described as either general or specific goals impelling action), Evoked Set (the consumers' assessment of the ability of the consumption choices that are under active consideration to satisfy his or her goals), Decision Mediators (the buyer's mental rules or heuristics for assessing purchase alternatives), Predispositions (a preference toward brands in the evoked set expressed as an attitude toward them), Inhibitors (environmental forces such as limited resources (e.g. time or financial) which restrain the consumption choice) and Satisfaction (represents a feedback mechanism from post-purchase reflection used to inform subsequent decisions). This process of learning serves to influence the extent to which the consumer considers future purchases, and seeks new information. Howard & Sheth (1973) suggested that consumer decision making differs according to the strength of the attitude toward available brands; this being largely governed by the consumer's knowledge and familiarity with the product class. In situations where the consumer does not have strong attitudes they are said to engage in Extended Problem Solving (EPS), and actively seek information in order to reduce brand ambiguity. In such situations, the consumer will also undertake prolonged deliberation before deciding which product to purchase or indeed, whether to make any purchase. As the product group becomes more familiar, the processes will be undertaken less

conscientiously as the consumer undertakes Limited Problem Solving (LPS) and eventually Routine Problem Solving (RPS) (Foxall, 1990).

Exogenous variables (as depicted at the top of the model) outline a number of external variables that can significantly influence decisions. As these factors are likely to depend on the individual buyer as well defined by Howard & Sheth (Loudon & Della Bitta, 1993). Howard & Sheth (1969) noted that these exogenous variables contained the history of the buyer up to the beginning of the period of observation. The five Output Variables on the right side of the model represent the buyers' response, and follow the progressive steps to purchase: Attention (the magnitude of the buyer's information intake), Comprehension (the processed and understood information that is used), Attitudes (the buyer's evaluation of a particular brand's potential to satisfy the purchase motives), Intention (the buyer's forecast of which product they will buy), and Purchase Behaviour (the actual purchase behaviour, 15 which reflects the buyer's predisposition to buy as modified by any inhibitors (Loudon & Della Bitta, 1993).

## **2.2 House Purchase Intention**

Wu and Teng (2011) defined purchase intention as customer prospective in planning to purchase a particular product or services in the future. Interestingly, both purchase intention and purchase decision are at two different stages in consumer behaviour theory however there is a significant link between both of these stages, especially in relation to house purchases (Ajzen, 1991; Han and Kim, 2010; Kunshan and Yiman, 2011). According to Ajzen (1991), intention is perceived to comprise motivational factors that lead to a particular behaviour which intention will imply how much a person has performed in order to perform the behaviour. In other words, if one has high intention for something, he or she will be more likely to increase performance in order to get what he intended to do initially. Therefore, house purchase intention in this study is defined as how consumers willing to purchase a house in the near future which is in line with the definition of Ajzen (1991).

## **2.3 House Features**

House features includes house design, building quality, interior and exterior designs, or finishing which these features are expected to influence on individual's house purchase decision (Adair et al., 1996; Daly et al., 2003; Sengul, Yasemin and Eda, 2010; Opoku and Abdul-Muhmin, 2010). Several scholars found that these house features are in fact important factors in determining consumers' choice and purchase of a house (El-Nachar, 2011; Haddad, Judeh, and Haddad, 2011; Sengul et al., 2010). Hence, this present study refers house features as house internal attributes such as quality of building, the design, as well as interior and exterior design; which are important for a consumer when they select and purchase a house.

## **2.4 Living Space**

Opoku and Abdul-Muhmin (2010) defined living space as private living space which includes things like living room size, kitchen size, number of bathrooms and number of bedrooms. They asserted that these living space features are the most important factors affecting consumer housing decision. Other researchers also concurred with Opoku and Abdul Muhmin findings when they found that there was a strong relationship between living space and consumers' house purchase decision making and pricing (Chan, So, Tang and Wong, 2008; Graaskamp, 1981; Opoku and Abdul-Muhmin, 2010). Therefore, this study defined living space as features such as the size of kitchen, bathroom, bedroom, living hall and other rooms available in the house. This definition is consistent with Opoku and Abdul Muhim's (2010) definition of living space.

## **2.5 Financial**

Past researchers defined financial status in relation to house buying as combination of house price, mortgage loans, income and terms of repayment (Opoku and Abdul-Muhmin, 2010; Yong Zhou, 2009). In other words, this definition refers to mortgage availability, terms of purchase, house price, assessment value of property, opportunity for quick appreciation, and waiting period (Haddad et al., 2011). Remarkably, several past studies found that the financial of house has much influence on how consumers make their house choice (Adair et al., 1996; Daly et al., 2003; Kaynak and Stevenson, 2007; Sengul et al. 2010; Xiao and Tan, 2007). In Malaysian context, the study by Razak, Ibrahim, Hoo, Osman and Alias (2013) confirmed that financial consideration especially house price has a very strong influence on house purchase intention.

## **2.6 Distance**

Findings from past studies concurred location as one of the most important factors affecting the individual's decision making in purchasing a house (Adair et al., 1996; Daly et al., 2003; Kaynak and Stevenson, 2007; Sengul et al. 2010; Xiao and Tan, 2007). Importantly, location is closely related to distance from various points of interest. Some of the various points of interest to be considered by house buyers are the distance to the central business district, distance to school, and distance to work and distance to retailer outlets (Adair et al., 1996; Clark, Deurloo and Dielemn 2006; Opoku and Abdul-Muhmin, 2010; Tu and Goldfinch, 1996; Wang and Li 2006). In Malaysia, studies also found that locational attributes appeared to support previous studies' findings whereby location was considered an important consideration for house buyers (Razak et al., 2013; Tan, 2011). In this study, distance is defined as the strategic location of the house from several important points such as business area, school etc.

## **2.7 Environment**

The environment of housing area is important and comprises of several important factors to the eyes of customers such as the condition of the neighbourhood, attractiveness of the area, quality of neighbouring houses, type of neighbouring houses, density of housing, wooded area or tree coverage, slope or topography of the land, attractive views, open space, non-residential uses in the area, vacant sites, traffic noise, level of owner-occupation in neighbourhood, level of education in neighbourhood, level of income in neighbourhood, security from crime, quality of schools, religious composition of neighbourhood (Adair et al., 1996). Past studies also found that these environmental factors were important determinants of household's residential purchase decision (Gabriel and Rosenthal, 1989; Morel, Mesbah, Oggero and Walker, 2001; Opoku and Abdul-Muhmin, 2010). While, Razak et al. (2013) also confirmed that the environment has a big influence to a house buyer in Malaysia.

## **2.8 Superstition**

Fortin, Hill and Huang (2014) of the University of British Columbia did on the effect of superstition in the Housing Market. The results of the study provided the evidence that Chinese superstitious beliefs can have significant effect on house prices in a North American market with a large Chinese immigrant population. Their study found that houses with address number ending in '4' were sold at a 2.2per cent discount. However they also found that those houses ending with number '8' were sold higher than houses with other addresses. Interestingly, this price effect wasalso found either in neighbourhoods with a higher than average percentage of Chinese residents. In relation to this, Tobayck (2004) identified the seven dimensions of paranormal belief in the western countries which are traditional religious belief, psi belief, witchcraft, superstition, spiritualism, extraordinary life forms, and precognition. However, Chou and Chang (2013) extended Toyback's dimensions to include two new

dimensions that are commonly observed in the Chinese eastern society namely qi and feng shui. Interestingly, the results of the study by Chou and Chang (2013) supported the assertions that paranormal belief had a very strong influence on consumer behaviour in Taiwan. They also found that the new dimensions of eastern paranormal belief had added to the predictive power of the traditional construct of the western paranormal belief in relation to predicting eastern consumer behaviours. Therefore, the address number of a house can be very important in the stage of house selection since some people have a strong belief that a lucky number can add fortune to their lives (Too, 1997). In addition, Boyer (1995) conducted a survey in Auckland New Zealand and found that many of Chinese buyers attempted to avoid buying houses with addresses of unlucky numbers even though they themselves claimed not to be feng-shui believers. The only reason why they avoided unlucky address number was that they were concerned about the resale prospect of the property. Hence, in this study, superstition is defined with two concepts namely superstition numbers and superstition ghost which these concepts are in line with superstitions introduced by Chou and Chang (2013).

## **2.9 Developer Brand**

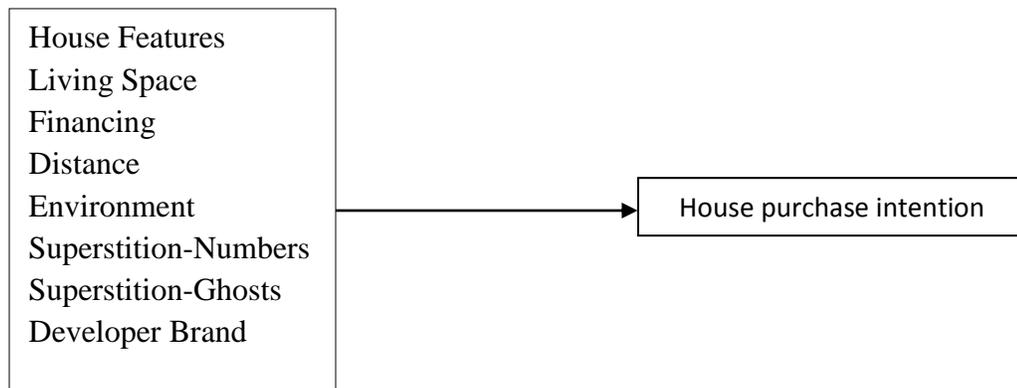
In Malaysian context, developer brand is regarded as important consideration made by a house buyer and this was confirmed by a study of Cheng and Cheok (2008). They asked the respondents on brand consciousness of the properties they have purchased. The results of their study showed that property purchasers were brand conscious in relation to the property developers. Furthermore, they ranked developers based on the brand personality and they emphasized on trend, professionalism and investment as the top 3 priorities in the property brand. In addition, a recent study by Razak et al. (2013) also concurred with the findings by Cheng and Cheok (2008) that developer image does have a strong influence on house purchase intention.

Based on the above mentioned discussion on the important factors that have influences on house purchase, several hypotheses were formulated as follows:

- H1: There is a significant relationship between house features and consumer house purchase intention.
- H2: There is a significant relationship between living space and consumer house purchase intention.
- H3: There is a significant relationship between financing and consumer house purchase intention.
- H4: There is a significant relationship between distance and consumer house purchase intention.
- H5: There is a significant relationship between environment and customer house purchase intention.
- H6: There is a significant relationship between superstition-numbers and consumer house purchase intention.
- H7: There is a significant relationship between superstition-ghosts and consumer house purchase intention.
- H8: There is a significant relationship between developer brand and consumer house purchase intention.

## **3.0 Methodology**

In this present study, seven independent variables (house features, living space, financial, distance, environment, superstition-numbers, superstition-ghosts and developer brand ) and one dependent variable namely consumer house purchase intention) were examined. The conceptual framework for the present study as depicted in Figure 3.1 below shows the interrelationships between these variables.



**Figure 3.1:** Conceptual Framework

### **3.1 Sample and data collection**

The research was limited to the area of Kota Kinabalu, the capital city of Sabah. The Malaysian Census in 2010 found that Kota Kinabalu has a population of 452,058 (Wikipedia, 2016) consisting of a mixture of many different races and ethnicities. The present study covered most of the majority ethnic groups and all income levels found in the population of Kota Kinabalu. The only criteria was that respondents should have the financial means to buy a house in Kota Kinabalu and legally eligible to do so. It was not known exactly what the total number of potential house buyers in Kota Kinabalu and who they were. This meant that there was no sampling frame available for the potential house buyer's population in Kota Kinabalu. Therefore Non-Probabilistic Convenient Sampling Method was adopted for this research.

The Gpower software was utilised to compute the minimum sample size required (Faul, Buchner & Lang, 2009). Given that the research model had a maximum of 8 predictors for the variable House Purchase Intention, the effect size as medium (0.15) and power needed as 0.95 were selected. Based from the result of the Gpower software's computation, the sample size required was 160. Therefore, the minimum number of data to be collected was equal to or greater than the 160 respondents. A total number of 260 set of questionnaires were to be prepared and distributed and 240 questionnaires were collected from respondents in the area of Kota Kinabalu. From 260 questionnaires, however, only 235 questionnaires were returned and valid to be used for data analysis.

## **4.0 Analyses and Results**

### **4.1 Profile of Respondents**

Information in Table 4.1 is the demographic profile of the respondents. The questionnaire was completed by 235 respondents. Out of 235 total respondents, 125 were female (53.2%) and the remaining 110 were males (46.8%) thus female respondents were slightly higher than male. Malaysians were the overwhelming majority of the respondents at 226, followed far behind by China, Pakistan and Fiji with six, two and one respondent respectively. In percentage terms they were 96 per cent, 2.6 per cent, 0.9 per cent and 0.4 per cent respectively.

**Table 4.1: Profile of Respondents**

<b>Demographic Variables</b>	<b>Categories</b>	<b>Frequency</b>	<b>Percentage</b>
<b>Gender</b>	Female	125	53.2
	Male	110	46.8
<b>Citizenship</b>	China	226	96.2
	Pakistan	6	2.6
	Fiji	2	0.9
	China	1	0.4
<b>Ethnicity</b>	Kadazan Dusun	78	33.2
	Malay	42	17.9
	Chinese	25	10.6
	Bajau	24	10.2
	Brunei	13	5.5
	Bumiputra Sabah	12	5.1
	Sino Kadazan Dusun	9	3.8
	Suluk	5	2.1
	Bugis	4	1.7
	Iban	4	1.7
	Melanau	3	1.3
	Pakistan	3	1.3
	Bidayuh	2	0.9
	Indian	2	0.9
	Irranun	2	0.9
	Jawa	2	0.9
	Banjar	1	0.4
	Bumiputra Sarawak	1	0.4
	Cocos	1	0.4
	Dayak	1	0.4
Fijian	1	0.4	
<b>Age</b>	Under 24	63	26.8
	25-34	118	50.2
	35-44	37	15.7
	45-54	12	5.1
	55 and above	5	2.1
<b>Marital Status</b>	Single	139	59.1
	Married	96	40.9
<b>Monthly Income</b>	≤ RM3,500	34	14.5
	RM3,501 – RM5,000	42	17.9
	RM5,001 – RM7,500	90	38.3
	RM7,501 – RM10,000	64	27.2
	> RM10,000	5	2.1
<b>Education</b>	SPM and below	112	47.7
	STPM / Diploma	29	12.3
	Bachelor Degree	14	6.0
	Master Degree	75	31.9
	PhD Degree	5	2.1
<b>Occupation</b>	Professional	0	0.0
	Public Sector	112	47.7
	Private Sector	29	12.3

	Own Business	14	6.0
	Student	75	31.9
	Unemployed	5	2.1
<b>House Owner</b>	Yes	101	43.0
	No	134	57.0

## 4.2 Factor Analysis

Exploratory Factor Analysis was performed separately for each category of the variables: Independent Variables with a total of 43 items and Dependent Variable items. Hair et al. (2010) describes that (EFA) Factor Analysis was employed to make sure that the number of items can be decreased to the number of conceptions (dimensions) that were originally hypothesised. The lowest satisfactory (cut-off) value for KMO is 0.50 for Bartlett's test of sphericity to be significant. Based on Kaiser's (1958) criterion, the eigenvalue should be 1 or more. The minimum value of factor loading 0.35 on one factor should be achieved to consider it as significant. Factor analysis was done on items of independent variables (house features, living space, financing, distance, environment, superstition-numbers, superstition-ghosts and developer brand). This examination revealed all the components had eigenvalues over Kaiser (1958)'s criterion of 1 and in combination explained 66.944 per cent of the variance. The Kaiser–Meyer–Olkin measure verified the sampling adequacy for the analysis, stand at 0.778. According to Field (2013) and Hutcheson and Sofroniou (1999) the values between 0.5 and 0.7 are mediocre, values between 0.7 and 0.8 are good, values between 0.8 and 0.9 are great and values above 0.9 are superb. (Field, 2013; Hutcheson & Sofroniou, 1999). For these data the value is 0.778, which falls into the range of being good, so the sample size is adequate for factor analysis. Table 4.2 summarizes factor loadings for House Features, Living Space, Financing, Distance, Environment, Superstition-Numbers, Superstition-Ghosts and Developer Brand the independent variables that were extracted from the rotated component matrix.

**Table 4.2 : Factor Analysis of Housing Attributes (Independent Variables)**

Items	F1	F2	F3	F4	F5	F6	F7	F8
<b>Factor 1: Financing</b>								
1 Monthly Repayment	0.8							
	06							
2 Interest Rate of Loan	0.7							
	93							
3 Loan Repayment Duration	0.7							
	81							
4 Loan	0.7							
	46							
5 Processing Fee	0.6							
	83							
6 House Price	0.6							
	30							
<b>Factor 2: Distance</b>								
1 Distance to Recreation Centre		0.8						
		32						
2 Distance to Market		0.7						
		87						
3 Distance to Business Centre		0.7						
		63						

4	Distance to school	0.7							
		08							
5	Width of Adjacent Street	0.5							
		97							
<b>Factor 3: Developer</b>									
1	A well-known Property Developer's Brand is best for me	0.8							
		40							
2	Houses built by less known Property Developers have poor quality	0.7							
		10							
3	I usually choose the more expensive of Property Developers	0.6							
		60							
4	I usually purchase houses developed by well-known Property Developers	0.6							
		50							
5	The higher the Cost of a house, the better is the Quality	0.6							
		00							
<b>Factor 4: Superstition - Numbers</b>									
1	I will still buy a house numbered 13							0.9	
								10	
2	I will still buy a house numbered 8							0.8	
								60	
3	I will still buy a house numbered 4							0.8	
								20	
<b>Factor 5: Environment</b>									
1	Noise							0.8	
								90	
2	Pollution							0.8	
								70	
3	Nearby Traffic							0.6	
								80	
<b>Factor 6: Superstition - Ghosts</b>									
1	I will still buy a house near a graveyard							0.8	
								90	
2	I will still buy a house said to be haunted							0.8	
								60	
3	I will still buy a house painted black							0.7	
								00	
<b>Factor 7: House Features</b>									
1	Construction Quality							0.7	
								8	
2	Construction Duration							0.6	
								90	
3	House Size							0.6	
								40	
<b>Factor 8: Living Space</b>									
1	Number of Storeys of House							0.8	
								10	
2	Number of bathrooms							0.7	
								60	
Eigenvalue		5.9	3.3	2.8	2.0	1.7	1.6	1.3	1.1

	02	85	8	3	8	4	6	2
% of Variance	12.	10.	8.5	8.2	7.6	7.4	6.4	5.1
	78	66	2	5	4	4	9	7
Total Variance Explained	66.9							
	44							
KMO Measure of Sampling Adequacy	0.77							
	8							
Bartlett's Test of Sphericity	3163							
	.38							
Significance	0.00							
	0							

Factor analysis was done on items of the dependent variable (Purchase Intention). The factor analysis of the initial 7 items of the Dependent Variable (Purchase Intention) reduced them to 5 items. It has an eigenvalue of 3.167 and accounted for 63.343% of the total variance. The KMO value was 0.854, and the Bartlett's test of Sphericity was significant at 0.000, which indicates that the data was suitable for factor analysis. The communalities of the 5 variables ranged from 0.581 to 0.721 and factor loadings of the variables ranged from 0.762 to 0.849 which satisfy all requirements. Table 4.3 summarizes factor loadings for dependent variable, house purchase intention.

**Table 4.3 : Factor Analysis of Customer Purchase Intention (Dependent Variable)**

Items	Factor Loadings
Purchase Intention	
<b>1</b> If a house is at a good Distance from all amenities, I intend to buy it	0.849
<b>2</b> If a house has good Environments, I intend to buy it	0.795
<b>3</b> If a house has all the Features which I like, I intend to buy it.	0.791
<b>4</b> If a house comes with good Financing Arrangements, I intend to buy it.	0.778
<b>5</b> If a house has a large Living Space, I intend to buy it.	0.762
Eigenvalue	3.167
Total Variance Explained	63.343
KMO Measure of Sampling Adequacy	0.854
Bartlett's test of Sphericity	475.529
Significant	0.000

### 4.3 Reliability Analysis

Cronbach's alpha was calculated to examine internal consistency of the scales used in this study. Cronbach's alpha coefficient can range from 0.0 to 1.0 where a value close to 1.0 indicates a high internal consistency of the scale, above 0.8 are considered good, 0.7 is acceptable and less than 0.6 is considered poor (Sekaran and Bougie, 2013). All the variables except for house features and living space had high reliabilities or acceptable reliabilities, which values are above 0.70. As for house features and living space have relatively acceptable reliabilities of Cronbach's alpha which are above 0.6.

**Table 4.4 : Reliability Analysis of the Variables**

<b>Variables</b>	<b>No of items</b>	<b>Cronbach's Alpha</b>
<b>Financing</b>	6	0.856
<b>Distance</b>	5	0.830
<b>Developer</b>	5	0.741
<b>Superstition – Numbers</b>	3	0.859
<b>Environment</b>	3	0.837
<b>Superstition - Ghosts</b>	3	0.790
<b>House Features</b>	3	0.613
<b>Living Space</b>	2	0.683
<b>House Purchase Intention</b>	5	0.854

#### 4.4 Testing the Hypotheses

The eight hypotheses (H1 to H8) were examined to understand whether there is a direct and significant relationship between independent variables and consumer house purchase intention. Table 4.5 below shows that 23.6 per cent of variances in consumer house purchase intention can be explained by the independent variables ( $R^2 = 0.236$ ,  $p < 0.01$ ). F value = 8.708, and  $p = 0.000 < 0.01$  which is very significant, implying that the model is adequate. Table 4.5 shows that there are five variables having significant positive influences on consumer house purchase intention: financing ( $\beta = .148$ ,  $p < 0.05$ ), distance ( $\beta = .170$ ,  $p < 0.01$ ), superstition-numbers ( $\beta = .136$ ,  $p < 0.05$ ), environment ( $\beta = .112$ ,  $p < 0.05$ ) and house features ( $\beta = .212$ ,  $p < 0.01$ ). However, the remaining three variables namely developer, superstition-ghosts, and living space have insignificant relationships with house purchase intention. Thus, hypotheses H1, H3, H4, H5, and H6 are accepted, while H2, H7 and H8 are not supported.

**Table 4.5 : Regression Analysis of Independent Variables and with House Purchase Intention**

<b>Dependent Variable</b>	<b>Independent Variable</b>	<b>Standard Coefficient Beta (<math>\beta</math>)</b>	<b>t-value</b>	<b>Sig</b>
<b>House Purchase Intention</b>	Financing	.148*	2.167	0.031
	Distance	.170**	2.566	0.011
	Developer	0.100	1.632	0.104
	Superstition - Numbers	.136*	2.221	0.027
	Environment	.112*	1.704	0.090
	Superstition - Ghosts	-0.057	-0.942	0.347
	House Features	.212**	3.177	0.002
	Living Space	-0.071	-1.055	0.292
<b>R2</b>	<b>.236</b>			
<b>Adjust R2</b>	<b>.209</b>			
<b>F change</b>	<b>8.708**</b>			

Note: Significant levels: \*\* $p < 0.01$ , \* $p < 0.05$

## **5.0 Discussion and conclusion**

### **5.1 Financing**

The findings of this study provided evidence that financing has a significant positive influence on house purchase intention despite a high price of houses in Kota Kinabalu. Notably, house price in Kota Kinabalu is highest in Malaysia. Buying a house will not be possible for most people, without adequate financing arrangement. However, the current situation where undersupply of housing and high demand of houses from consumers in Kota Kinabalu has made sustainable real estate industry and survival rate even though the market price of houses were offered at a very high price. For example, a two bedrooms apartment of 850 square feet in Kota Kinabalu can be sold at the price around RM300 000 whilst the price of intermediate double terrace house is around RM550 000. In general, the finding of this studies is consistent with the findings of some previous studies which have highlighted the importance of financing and intention to purchase a house (Hinkle & Combs, 1987; Kaynak & Stevenson, 2007; Opoku & Abdul-Muhmin, 2010; Razak et al., 2013; Sengul et al., 2010; Xiao & Tan, 2007; YongZhou, 2009).

### **5.2 Distance**

Distance is another attribute discussed and in this study found that there is a significant positive relationship with house purchase intention reaching a standard beta coefficient of 0.170 ( $p < .01$ ). This implied that consumers in Kota Kinabalu perceived considerable importance on distance especially from house to school, workplaces and business centre as compared to locations to perform other daily activities. In addition, they also do not bother about the travel distance from their house in performing their daily activities. This could be due to availability of owning vehicles and good road conditions. In addition, a very high house price are expected considering houses with good distance from amenities located at Kota Kinabalu. However, consumers would have every intention to make the purchase if a house with a good distance from various amenities were offered by housing developers. The findings of this present study corresponded with previous studies by several researchers such as Iman, Ahmad and Ahmadreza (2012), Kaynak and Stevenson (2007), Opoku and Abdul-Muhmin (2010), Razak et al. (2013), Sengul et al.(2010), Tan (2011) and Tu and Goldfinch (1996). These studies have proven that distance is one important criteria that a consumer observe upon deciding chosen housing areas.

### **5.3 Developer Brand**

Surprisingly, this present study discovered that developer brand did not have a significant relationship with house purchase intention. This means that consumers in Kota Kinabalu generally did not perceive image or brand of the house developers as important. It can be concluded that amongst consumers in Kota Kinabalu, all developers' brands were perceived equally, and consumers would only concentrate on housing products and features instead of looking at developers brands. Unrecognized brands would lead to a possibility of low marketing activities performed by housing developers in promoting the company. This could be due to low competition and actual numbers of housing developers in Kota Kinabalu or Sabah as a whole. In comparison to previous local studies, the findings of Cheng and Cheok (2008) and Razak et al. (2013) contradicted with this present study finding. It is possible that the housing situation in peninsular Malaysia is quite different in Sabah. Apparently, there are more competitions in Peninsula Malaysia since there are greater number of developers. Moreover, Peninsula Malaysia consumers are found to be more sophisticated in their housing choice.

## **5.4 House Features**

In this study, house features are found to have a significant relationship with house purchase intention with standard beta coefficients of 0.212 ( $p < .01$ ). When consumers in Kota Kinabalu decided which house to be purchased, they greatly emphasized on special features of the houses such as construction quality, construction duration and size of the house. This is due to the fact that these features are tangible and easily for consumers to evaluate upon buying a house. Remarkably, the findings of this present study echoed previous studies such as Adair et al. (1996), Daly et al. (2003), Opuku and Abdul-Muhmin (2010), Razak et al. (2013) and Sengul et al. (2010).

## **5.5 Living Space**

Much of previous studies found the importance link of living space and house purchase (Chan, So, Tang and Wong, 2008; Graaskamp, 1981; Opoku and Abdul-Muhmin, 2010). However, it was interesting to note that living space was found to have a negative and insignificant relationship with house purchase intention. Hence, to average Kota Kinabalu house buyers, living space features such as number of storey and number of bathrooms were not significant in their purchase decision. It appears that average consumers in Kota Kinabalu see a housing product as coming in standardized size which just meets the minimum requirement of an average family to satisfy their needs. Any extra would be a luxury and incur high price which they do not need. Interestingly, the finding of this study was not in line with many local studies such as Razak et al. (2013).

## **5.5 Environment**

To many house buyers, housing environment is vital so that they can have a peaceful life and minds living in area which are free from noise, traffic and pollution. This present study also recognized the importance of environment especially its link to house purchase decision. It was found that environment has a significant positive relationship with house purchase intention ( $\beta = .112$ ,  $P < .05$ ). In general, house buyers in Kota Kinabalu are concerned on environmental issues especially towards noise, air pollution and traffic issues. This finding is consistent with the study done by Zrobek, Trojanek, Sokolnik and Trojanek (2015) when their studies amongst Poland consumers found that consumers preferred a quiet neighbourhood and scenic value as the most important environment attributes.

## **5.6 Superstition-Numbers**

Superstition-numbers is a concerning factor when some numbers are perceived as lucky or unlucky to the individual connected to it. Among the Hakka Chinese for example, number four (4) sounds like the word 'death' and this is obviously not favourable to them. Similarly, number thirteen (13) is considered unlucky universally. However, number eight (8) is considered a lucky number by majority of the Chinese. In this study however, it was found that superstition-numbers has a significant but weak positive relationship with house purchase intention ( $\beta = .136$ ,  $p < .05$ ). It can be concluded that consumers in Kota Kinabalu are still superstitious to some extent but contrary to expectation. In a positive sense, numbers mentioned above were considered lucky on average, even for number 4 and 13. Among possible reasons are the small number of Chinese respondents with quite high education level and young in age. Importantly, this present finding is not consistent with some of previous study done by Fortin et al. (2014) and Too (1997).

## **5.7 Superstition-Ghosts**

The ghost phenomenon is universal, influencing all societies in the world and having them around the house is very undesirable. As expected, superstition-ghosts had a negative but insignificant relationship with house purchase intention ( $\beta=-.942$ ,  $p>.05$ ) and providing the fact that this paranormal belief did not prevent consumers in Kota Kinabalu from buying a house. Importantly, the ghosts phenomena did not influence their house buying behaviour since they might not believe the existence of this phenomenon. This can be explained by majority of respondents in this study were moslems and having a house near to graveyard would not be an issue.

## **6.0 Conclusion and Implication of Study**

Housing is amongst the most basic of all human needs. Identifying the various dimensions of housing attributes, their relationship with purchase intention, will be of great help to interested parties. The results of the study revealed that five variables were found to be significant and have positive relationships with house purchase intention. The results showed financing, distance, superstition-numbers, environment and house features were important attributes to house buyers when they purchase a house. Developers in Kota Kinabalu should gain better understanding about the actual housing needs of consumers in the Kota Kinabalu market and be able to tailor their housing products to better satisfy these needs. Housing developers in Kota Kinabalu, Sabah in particular should be able to make better decisions in designing and managing their housing products in order to meet the requirements of the market, through knowing the most appropriate housing attributes, as revealed by this study. In this way, consumers will benefit from greater satisfaction with their house purchases and consequently, the developers should make more profit through optimum equilibrium pricing and faster business turnover. This research study has also verified empirically the applicability on Theory of Buyer Behaviour Model to understand significant factors that determine consumer house purchase behaviour. It was found that three attributes of perception construct were important namely house features, distance and environment, whilst only one attribute of exogenous variable, which was superstitious numbers found to be significant in its relationship with house purchase intention (output construct).

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