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A DESCRIPTIVE ANALYSIS OF HOUSING AFFORDABILITY IN MALAYSIA

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Abstract: *There has recently been widespread public debate and media attention around housing affordability in Malaysia as it is one of the key measures for the stability of a country's socio-economy. This is because having a home is not only necessity for people to protect their faith, posterity, develop their intellect and create wealth, but it also allows society to improve their well-being if their needs are fulfilled. Housing, in fact, serve as a hub of economic activity, a sign of achievement, social acceptance, and an element of urban growth. However, housing affordability concerns are particularly widespread in lower and middle-income households in most major Malaysian cities, with most of them having trouble purchasing a home. Therefore, this paper tends to discuss the descriptive analysis of housing affordability containing several variables (House Price, Household Income, Household Expenses, Land Cost, Population, Inflation, Interest rate and Rental Rate) used in this study for the sample of East Coast Region (Kelantan, Terengganu, and Pahang),Central Region (Selangor, Kuala Lumpur, and Negeri Sembilan), Southern Region (Melaka and Johor), Northern Region (Perlis, Kedah, Penang and Perak), and also East Malaysia (Sabah and Sarawak).*

Keywords: *Housing Affordability, House Price, Household Income, Rental Rate.*

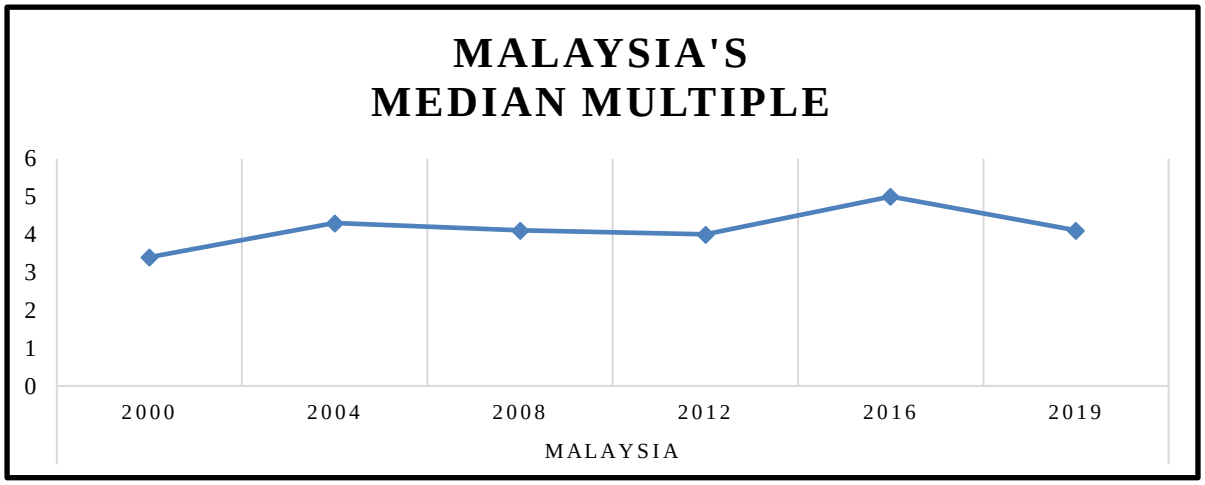
INTRODUCTION

Housing is the largest single lifetime investment for most people. Others, on the other hand, will simply consider housing as a refuge and a means to meet their necessities along with food and clothing. As pointed out by Sohaimi et al., (2015), a house is more than just a place to live since it has psychological importance, economic well-being, and individual riches. Home ownership, on the other hand, is believed to provide happiness to society. Well-being is represented in the quality of life under some situations, such as providing society with residential stability, which can improve physical and psychological well-being, reduce stress exposure, and provide a feeling of belonging (Shaw,2004). Housing affordability can be defined as a person ability that has the potential to make saving based on their income not only to the housing cost, but also to another consumption (Mostafa, Wong and Hui, 2006). Based on Torluccio & Dorakh (2011) housing affordability can be described when a person shows his capability to buy a house. Normally, to determine whether someone can afford to own a house or not, means looking at their expenses, where after paying for necessities, residual income exists to purchase other things. In this situation, they are considered as capable of owning a

house (Bujang et al, 2015). As such, the study that related to housing affordability is very important because, inability of home ownership will cause adverse consequences and lead to instability of society's wellbeing.

REVIEW ON HOUSING AFFORDABILITY IN MALAYSIA

The housing industry in Malaysia has grown rapidly since the country's independence to this day, the housing industry has been a key driver of the country's economic development and improvement. However, housing affordability in Malaysia tends to decline over the years. Its particularly prominent amongst lower and middle-income households with most of them having difficulty affording a home (Baqutaya, Ariffin, and Raji, 2016). Besides that, home is considered affordable if the price does not exceed three times the annual household income according to Cox and Pavletich (2018) in the 15th Demographia International Housing Affordability Survey. Affordability level in Malaysia however, has deteriorated with the median multiplier rose to 4.8 times in 2016 from 3.9 times in 2012 which made houses even more unaffordable (Tay, 2019)



Sources: National Property Information Centre (2020)

Figure 1. Trends of Housing Affordability Index (Median Multiple) in Malaysia

The figure above displays a trend in Malaysian home affordability (median multiple). This graph shows that MM has been deteriorated since at least the year 2000, as it has surpassed the 3.0 level of MM affordability. Malaysia's median multiples in the first decade (2000-2009) were primarily in the range of (3.0 to 4.0), which were "moderately affordable". In the next decades of (2010-2019), Malaysia scored the highest level of MM (5.0) in 2016, indicating that housing was at the worst level of "severely unaffordable". This problem arose because of housing prices increasing faster than income, making dwellings increasingly unaffordable (Abdul Shakur, Mohamed, and Abdul Hadi, 2017). However, the level of MM began to improve at (4.1) until 2019 where the overall median house price on average has declined from RM298,000 in 2016 to RM289,646 in 2019, while during the same period, the annual median household income had risen by four per cent annually from RM62,736 in 2016 to RM70,476 in 2019. Although it has gradually decreased, the 2019 ratio indicates that homes remained seriously unaffordable in general according to the Economic Outlook 2021 report released by the (Ministry of Finance, 2021). This scenario simultaneously become the largest housing

affordability problem (Cox & Pavletich, 2018). The issue of short-term affordability may be due to supply-demand, but in the long run, it should be linked to the widening disparity between rising household income and rising housing costs (Gihring, 2000). If house prices continue to rise much faster than income, that means homes are even more unaffordable to be purchase (Tejvan Pettinger, 2019). In the end, not only home buyers will be affected, but rent will also increase soon, including on social housing. Besides that, Karantonis (2013) stated that increase in population is a major underlying driver in housing demand, and without a new supply of residences, prices for both renting and buying homes will rise. This will have an impact on affordability, which is exacerbated in many large cities by a shift in living preferences, which has resulted in a decrease in home occupancy rates. However, Mulder (2006) on the hands states that the demand for housing is not driven by the number of population, but by the number of households. In most European countries, the number of households has expanded far faster than the population in recent decades, owing to a fall in average household size.

Apart from that, the cost of land also considered as significant element in determining house affordability. Wen and Goodman (2013) found that the relationship between house prices and land prices in China is endogenous, with all interactions being positive. This is in line with Yap and Ng (2018) in their study highlighted that, the scarcity of land in the main cities has resulted in a rise of housing prices where the land price is subjected to the location with different connectivity and scale of development. On the other hands, Bujang et al., (2015), in their study shows that person's ability to get a house also determined by household expenses which consist of housing and non-housing expenses. If there is money left over after meeting necessities, they are considered capable of purchasing a home, and vice versa. Moreover, (Hashim, 2010) stated that the growing of residential property market in Malaysia is effected by various factors such as inflation. Zainuddin and Yusof (2020) examines the relationship between terrace house prices in Penang with interest rate, inflation, and cost of renting terrace houses. The result indicates that from 2009 to 2016, the price of terrace houses in Penang is only driven by inflation rate and interest rate (mortgage rates) variables. Meanwhile, interest rates also might have an impact on house affordability in Malaysia. Shi, Jou andTripe (2014) took an example on how changes in central bank policy and retail mortgage rates affected real house prices in New Zealand from 1999 to 2009. They discovered that real interest rates are correlated with real home prices in a significant and beneficial way. These findings are in line with Miles (2014) who found that the long term rate was highly significant for housing whereas the short term fed funds rate was negative in the United States.

Aside from that, a variety of mortgage instruments with varied interest rates and maturities are available across the country to meet the needs of borrowers and lenders. These products, however, are interest-based and are not suitable for Muslim borrowers (Shirizi, Zulkhibi and Syed Ali, 2012). Unlike the conventional mechanism, Islamic finance forbids the use of interest in any transaction and instead favors sale-based, lease-based, or partnership-based solutions. In practice, Malaysian Islamic banks employ the Islamic Base Rate (IBR), which effective on January 2, 2015 (formerly known as Base Financing Rate, BFR), to calculate their effective profit rate on MM financing. However, Charging the rental payment in accordance to IBR will create an impression of similarity with traditional interest rate (Ali, Hassan and Othman, 2017). Although benchmarking against the conventional interest rates is permissible, Muslim scholars (particularly economists) are urged to seek an alternative that is

not reliant on conventional interest rates (Meera and Razak, 2009). Therefore, Yusof et al., (2016) proposed rental rate index which is a better alternative than the lending rate (LR) by integrating the ratio of UK RPI over HPI. However, because the aggregate housing rental price index is not available in Malaysia, the rental yield over median home price is utilized as a substitute and is better suitable for determining the level of affordability. In particular, the rental rate is found to be impervious to short-term economic volatility, yet it is indicative of economic fundamentals in the long run. Therefore, it can be concluded that there are several gaps, conflicting and mismatch relationship appeared in the context of housing affordability in Malaysia. Hence, it warrants for further investigation should be more taken in this field since the regulation of national housing policy in Malaysia is always changes from time to time.

METHODOLOGY

The objective of this study is to discuss the descriptive analysis of housing affordability by each region in Malaysia over the 20 years period of 2000 to 2019. The overall situation of housing affordability (HA) in Malaysia with determinants variables such as house price (HP), household income (HI), household expenses (HE), population (PL), interest rate (IR), inflation (IF), rental rate (RR), and land cost (LC) were analysed in this paper. In achieving this objective, this paper used secondary data that are acquired from National Property Information centre and Department of Statistical Malaysia. Besides that, the secondary data in this paper also retrieved from references such as journals and seminar papers.

FINDING

This paper discusses the descriptive analysis of housing affordability by each region in Malaysia over the 20 years period of 2000 to 2019.

Descriptive Analysis

The overall situation of housing affordability (HA) in Malaysia with determinants variables such as house price (HP), household income (HI), household expenses (HE), population (PL), interest rate (IR), inflation (IF), rental rate (RR), and land cost (LC) were analysed in this chapter. The mean, standard deviation, skewness, kurtosis, maximum and minimum values of the variables are all presented in this study as descriptive statistics. The descriptive statistics for determinants variables of interest rate and inflation rate by region in Malaysia are the same because the value is reflected in Malaysia as a whole. All of the variables in this study are acceptable and good in terms of skewness and kurtosis because the acceptable values of skewness and kurtosis, according to (Hair et al., (2014) and Bryne (2010) are 2 to +2 and 7 to +7, respectively.

Table 1. Descriptive statistics of East Coast, Malaysia (Kelantan, Terengganu, and Pahang)

	HA	HP	HI	HE	PL	IR	IF	RR	LC
Kelantan									
Mean	4.32	120960.89	2121.42	1738.57	1.59	6.47	2.19	2.96	74.2
Standard Deviation	0.41	52114.49	839.09	576.86	0.17	0.37	1.24	0.5	25.1
Kurtosis	-1.32	-1.34	-1.26	-1.58	-1.15	0.34	1.09	0.33	-1.85
Skewness	0.002	0.08	0.43	0.42	0.2	-1.09	1.01	1.2	-0.54
Minimum	3.7	50189	1102	1105	1.32	5.55	0.58	2.5	38
Maximum	4.9	210000	3563	2650	1.89	6.91	5.44	4.13	99
	HA	**HP**	**HI**	**HE**	**PL**	**IR**	**IF**	**RR**	**LC**
Terengganu									
Mean	4.27	177799.1	2929.31	2030.73	1.06	6.47	2.19	3.67	49.8
Standard Deviation	0.3	75684.27	1558.84	1018.76	0.11	0.37	1.24	0.71	3.88
Kurtosis	1.62	-1.69	-0.89	-1.09	-1.06	0.34	1.09	0.92	-0.95
Skewness	0.18	0.24	0.68	0.71	0.15	-1.09	1.01	-0.81	0.25
Minimum	3.6	82789	1287	990	0.89	5.55	0.58	2.03	44
Maximum	5	281640	5873	3835	1.25	6.91	5.44	4.87	56
	HA	**HP**	**HI**	**HE**	**PL**	**IR**	**IF**	**RR**	**LC**
Pahang									
Mean	4.29	147722.73	2810.15	2055.47	1.49	6.47	2.19	3.03	70.1
Standard Deviation	0.42	59528.58	997.49	657.8	0.12	0.37	1.24	0.34	10.33
Kurtosis	0.71	-1.52	-1.15	-1.52	-0.96	0.34	1.09	1.46	0.29
Skewness	1.17	0.36	0.21	0.21	-0.31	-1.09	1.01	0.54	-0.94
Minimum	3.8	71400	1367	1215	1.26	5.55	0.58	2.46	50
Maximum	5.3	238740	4440	3100	1.67	6.91	5.44	3.94	83

Table 1 shows the descriptive analysis for a sample of Malaysia's East Coast Region (Kelantan, Terengganu, and Pahang) from 2000 to 2019. The average cost of housing in Kelantan is (4.32), compared to (4.29) in Pahang and Terengganu (4.27). Furthermore, Pahang has the highest standard deviation of home affordability at 0.42, with maximum and minimum values of 3.8 and 5.3, respectively. Aside from that, Kelantan's highest and minimum values are 3.7 and 4.9, while Terengganu's are 3.6 and 5, respectively. We can see that in comparison to Terengganu and Pahang, Kelantan has the highest mean value of home affordability (4.32) in this table. Even though Kelantan has the lowest average of house prices (RM120,960.89), the level of affordability remains low due to the lowest mean family income (RM2,121.42). Not just for the East Coast Region, but Kelantan residents have the lowest yearly median income compared to the rest of Malaysia (National Property Information Centre, 2017). As a result, according to Osman et al., (2020), the median house price in Kelantan generally surpasses the three times median annual household income barrier, indicating that houses in all Kelantan districts are unaffordable. Moreover, Kelantan also has the largest mean population (1.59 million) in East Coast Region, which has an impact on home affordability. This is in line with Aminah Md. Yusof and Azimah Razali (2004), population and urbanisation are the key determinants of housing affordability in Malaysia. Moreover, the rising land cost in Kelantan

(RM74.2) per sqm also influencing housing affordability as supported by reported by Auyong, Yip, Woo and Senadjki (2018) in their study shows that housing prices are associated with changes in construction cost, land cost, compliance cost resulting in affecting affordability level of housing.

Table 2. Descriptive statistics of Central Region (Selangor, Kuala Lumpur, Negeri Sembilan)

	HA	HP	HI	HE	PL	IR	IF	RR	LC
Selangor									
Mean	3.96	254602.57	5178.68	3001.94	5.51	6.47	2.19	4.2	213.2
Standard Deviation	0.48	105293.89	1716.05	1059.68	0.66	0.37	1.24	0.53	73.58
Kurtosis	0.99	-1.59	-1.08	-1.47	-0.55	0.34	1.09	-0.06	-1.29
Skewness	0.81	0.37	0.51	0.49	-0.16	-1.09	1.01	-0.6	0.16
Minimum	3.2	134734	3023	1787	4.2	5.55	0.58	3.08	118
Maximum	5.2	407490	8210	4709	6.53	6.91	5.44	4.9	320
	HA	**HP**	**HI**	**HE**	**PL**	**IR**	**IF**	**RR**	**LC**
Kuala Lumpur									
Mean	4.92	341444	5702	3420.47	1.63	6.47	2.19	3.42	2729.1
Standard Deviation	0.39	140009.8	2819.7	1471.48	0.14	0.37	1.24	0.71	832.73
Kurtosis	0.32	-1.61	-1	-1.65	-0.73	0.34	1.09	-1.53	1.09
Skewness	-0.58	0.34	0.42	0.37	-0.64	-1.09	1.01	0.03	-1.64
Minimum	4	177280	1053	1840	1.35	5.55	0.58	2.33	1174
Maximum	5.6	538000	10549	5692	1.79	6.91	5.44	4.44	3260
	HA	**HP**	**HI**	**HE**	**PL**	**IR**	**IF**	**RR**	**LC**
Negeri Sembilan									
Mean	3.5	147698.68	3324.47	2174.68	1	6.47	2.19	3.83	83.2
Standard Deviation	0.83	76978.05	1056.69	844.13	0.08	0.37	1.24	0.72	36.84
Kurtosis	-0.43	-1.31	-1.39	-1.11	-1.29	0.34	1.09	-1.48	0.06
Skewness	1.01	0.64	0.38	0.61	-0.28	-1.09	1.01	0.48	0.4
Minimum	2.6	62950	2004	1190	0.85	5.55	0.58	3	32
Maximum	5.1	280235	5055	3712	1.13	6.91	5.44	5.11	143

The descriptive analysis for the sample of the West/Central Region (Selangor, Kuala Lumpur, and Negeri Sembilan) is presented in Table 2. Kuala Lumpur has the greatest mean value for housing affordability (4.92), with a standard deviation of 0.39 and maximum and minimum values of 4 and 5.6, when compared to Selangor (3.96) and Negeri Sembilan (3.5). Besides that, the maximum value and minimum value in Selangor are 5.2, and 3.6 and Negeri Sembilan are 2.6 and 5. For the Central Region, we can observe that Kuala Lumpur has the highest mean value of home affordability. This is due highest average of house price (RM341,444) resulting in decrease in housing affordability. Even though the population of Kuala Lumpur earns the average greatest household income (RM5702) in comparison to the population of other states, but then it still as extremely too highly overpriced housing. This is consistent with Hassan et al., (2019) found that housing price and household income level were

the most important factors influencing housing affordability in Kuala Lumpur. In addition, the rising cost of land in Kuala Lumpur (RM2729.1) per sqm has had an impact on house affordability. This is consistent with previous study by Yang and Bao in (Wen et al., 2013) who claim that house prices rise due to land shortage and growing land costs. Furthermore, the greatest expenditure of household expenses (RM3420.47) by a community in Kuala Lumpur demonstrated that rising living costs are harming home affordability at the same time. This is consistent with (Md Sani, 2013) in a study on indicators affecting Kuala Lumpur's low-cost housing found that household income and expenses have an impact on housing affordability.

Table 3. Descriptive statistics of Southern Region (Melaka, and Johor)

	HA	HP	HI	HE	PL	IR	IF	RR	LC
Melaka									
Mean	2.86	130673.1	3759.31	2439.63	0.78	6.47	2.19	3.58	64.5
Standard Deviation	0.22	54085.43	1464.8	959.1	0.11	0.37	1.24	0.64	19.36
Kurtosis	-0.88	-1.49	-1.44	-1.54	0.76	0.34	1.09	-0.99	-0.61
Skewness	-0.46	0.23	0.37	0.3	-0.96	-1.09	1.01	0.21	-0.84
Minimum	2.4	54200	1883	1112	0.5	5.55	0.58	2.66	31
Maximum	3.2	207874	6054	3919	0.93	6.91	5.44	4.83	85
	HA	**HP**	**HI**	**HE**	**PL**	**IR**	**IF**	**RR**	**LC**
Johor									
Mean	4.1	186845.9	3729.2	2343.2	3.16	6.47	2.19	3.46	149.2
Standard Deviation	0.66	99188.33	1537	1034.37	0.42	0.37	1.24	0.49	26.66
Kurtosis	2.11	-1.11	-1.21	-1.58	-1.53	0.34	1.09	-1.53	-1.34
Skewness	1.52	0.78	0.64	0.51	-0.11	-1.09	1.01	-0.19	-0.17
Minimum	3.4	86200	2112	1345	2.5	5.55	0.58	2.73	110
Maximum	6	350000	6427	4025	3.76	6.91	5.44	4.09	185

The descriptive analysis for the sample descriptive statistics of the Southern Region (Melaka and Johor) is presented in Table 3. Compared to the mean value of Melaka (2.86) with a standard deviation of 0.22, Johor has the highest mean value of housing affordability (4.1) with a standard deviation of 0.86. Meanwhile, the maximum and minimum value in Johor is 3.4 and 6 while Melaka are 2.4 and 3.2. We can see that Johor has denominated the mean value of housing affordability in the Southern Region. Even though the average household income in Johor (RM3729.2) is larger than in Melaka (RM3759.31), but then the average house price in Johor is still the greater (RM186845.9) and makes it difficult to afford a home. This is supported by Osman, Khalid and Yusop (2017) in their study stated that despite the presence of affordable housing policy for the State of Johor, house prices in the state is largely higher than what the population can afford, making housing unaffordable to the population. Besides that, the increasing in the mean value of household expenses and land cost in Johor also would have an impact to housing affordability. This is supported by Mostafa (2008) that household expenses which consisting of housing expenditure and non- housing expenditure will affect the level of affordability. Meanwhile Wen et al., (2013) stated that housing prices and land prices are endogenous, and their interactions are all positive to influence housing affordability. Apart

from that, the increased population in Johor (3.17 million) has resulted in an increase in housing demand, which has caused house prices to rise, making home affordability more difficult, especially for medium and lower income earners (Lin et al.,2018)

Table 4. Descriptive statistics of Northern Region (Perlis, Kedah, Pulau Pinang, and Perak)

	HA	HP	HI	HE	PL	IR	IF	RR	LC
Perlis									
Mean	4.02	129675.15	2574.21	1775	0.22	6.47	2.19	2.84	53.1
Standard Deviation	0.19	56013.22	1201.38	794.31	0.01	0.37	1.24	0.14	12.32
Kurtosis	-0.4	-1.49	-1.25	-1	-0.57	0.34	1.09	-0.98	-0.66
Skewness	0.22	0.5	0.67	0.82	-0.62	-1.09	1.01	0.2	0.09
Minimum	3.9	66341	1344	1023	0.19	5.55	0.58	2.59	35
Maximum	4.6	220000	4594	3161	0.25	6.91	5.44	3.12	72
	HA	**HP**	**HI**	**HE**	**PL**	**IR**	**IF**	**RR**	**LC**
Kedah									
Mean	3.7	121560.26	2573.15	1788.84	1.92	6.47	2.19	3.58	108.5
Standard Deviation	0.44	50608.28	1038.47	615.15	0.18	0.37	1.24	0.32	21.41
Kurtosis	-1.02	-1.37	-1.35	-1.72	-1.02	0.34	1.09	0.53	-0.74
Skewness	-0.17	0.2	0.51	0.31	-0.31	-1.09	1.01	-0.57	0.46
Minimum	3	53321	1395	1100	1.58	5.55	0.58	2.91	81
Maximum	4.5	199100	4325	2759	2.18	6.91	5.44	4.17	143
	HA	**HP**	**HI**	**HE**	**PL**	**IR**	**IF**	**RR**	**LC**
Pulau Pinang									
Mean	4.08	200707.57	3898.68	2565.68	1.55	6.47	2.19	2.5	211.2
Standard Deviation	0.9	97122.75	1272.25	715.66	0.15	0.37	1.24	0.67	81.81
Kurtosis	-0.49	-1.475157	-1.14	-1.32	-0.85	0.34	1.09	-0.38	-0.46
Skewness	0.48	0.38	0.58	0.49	-0.39	-1.09	1.01	0.95	0.84
Minimum	2.8	84543	2510	1740	1.25	5.55	0.58	1.72	117
Maximum	5.8	356994	6169	3793	1.77	6.91	5.44	3.86	346
	HA	**HP**	**HI**	**HE**	**PL**	**IR**	**IF**	**RR**	**LC**
Perak									
Mean	3.94	133042.15	2655.73	1933.78	2.31	6.47	2.19	3.93	107.3
Standard Deviation	0.51	61146.4	999.69	629.88	0.16	0.37	1.24	0.53	68.13
Kurtosis	-0.08	-1.55	-1.36	-1.31	-1.6	0.34	1.09	0.16	-0.32
Skewness	0.62	0.51	0.57	0.56	-0.29	-1.09	1.01	0.87	0.96
Minimum	3.2	60653	1547	1170	2.05	5.55	0.58	3.18	43
Maximum	5.1	221131	4273	2928	2.51	6.91	5.44	5.01	223

Table 4 reports the descriptive analysis for the sample descriptive statistics of Northern Region (Perlis, Kedah, and Penang). Pulau Pinang has the highest mean value of housing affordability (4.08) with the standard deviation of 0.9 and the maximum and minimum value of 2.8 and 5.8 compare to Perlis (4.02), Perak (3.94), and Kedah (3.7). Aside from that, the

maximum and minimum value in Perlis is 3.9 and 4.6, respectively, whereas Perak 3.2 and 5, while Kedah at 3.0 and 4.5. For the Northern Region, we can see that Pulau Pinang has the greater mean value of housing affordability compared to Perlis, Perak and Kedah. This is attributable to an increase in the mean property price (RM200707.57), even though household income (RM3898.68) is higher than in Kedah and Perlis. This in line with Leng, Malek and Yasin (2017) stated that while house costs have increased beyond the grasp of most local Penangites, particularly in highly urbanised places such as Penang Island, urbanites' income levels have not risen in lockstep. Furthermore, due to the rising cost of living, the community in Pulau Pinang spends more each month on household expenses (RM2565.68) than in Kedah (RM1788.84) and Perlis (RM1775), putting a strain on housing affordability. This is reinforced by the Household Expenditure Survey Report (2019), which indicated that an increase in overall household spending reflects a deterioration in level housing affordability, as the median house price remains extremely out of reach. Besides that. the level of housing affordability in Pulau Pinang is also influenced by rising land costs (RM211.2) per sqm. This is in line with previous study of Wen (2017) found that housing price and land price have a mutually causal relationship. Rising housing prices lead to higher land prices from a demand standpoint, but land prices are a factor in rising housing prices from a supply standpoint, resulting in decreasing level of housing affordability.

Table 5. **Descriptive statistics of Sabah and Sarawak**

	HA	**HP**	**HI**	**HE**	**PL**	**IR**	**IF**	**RR**	**LC**
Sabah									
Mean	5.4	184304.52	2708.73	1480.78	3.26	6.47	2.19	4.01	147.4
Standard Deviation	0.43	80289.22	1059.1	501.37	0.43	0.37	1.24	0.81	30.32
Kurtosis	-0.07	-1.4	-1.63	-1.55	-1.14	0.34	1.09	-0.82	-0.97
Skewness	-0.03	0.31	0.37	0.53	0.07	-1.09	1.01	0.89	-0.81
Minimum	4.6	83790	1503	930	2.56	5.55	0.58	3.26	98
Maximum	6.3	320000	4235	2277	3.9	6.91	5.44	5.6	177
	HA	**HP**	**HI**	**HE**	**PL**	**IR**	**IF**	**RR**	**LC**
Sarawak									
Mean	4.46	158450.78	2916.36	1963.21	2.44	6.47	2.19	3.66	145.7
Standard Deviation	0.58	73618.51	1021.87	595.24	0.25	0.37	1.24	0.73	35.95
Kurtosis	2.94	0.73	-1.42	-1.41	-1.43	0.34	1.09	-0.99	-1.64
Skewness	1.82	1.27	0.37	0.4	-0.06	-1.09	1.01	0.57	-0.28
Minimum	4	85600	1694	1220	2.05	5.55	0.58	2.69	96
Maximum	6.1	328000	4544	2945	2.81	6.91	5.44	4.9	189

Table 5 reports the descriptive analysis for for Sabah and Sarawak. In Sabah, affordability (5.1) is devoted as greatest mean value compare to Sarawak (4.46) with the standard deviation of 0.43 and maximum and minimum value are 4.6 and 6.3. Meanwhile, Sarawak recorded the standard deviation of 0.58 with maximum and minimum value of 4.0 and 6.1. We can observe that Sabah has the highest mean value of housing affordability due to the disparity between of the average house price (RM2708.73) and household income (RM2916.36). This is supported by Nga, Aslinah and King (2014) shows that the actual

capability of house purchasers in Sabah is still low when compared to the velocity of price increases rather than household income in the housing market. Therefore, Azahar (2021) of the EMIR Research stated that there is a need to standardise salaries across the country because the cost of living in Sabah is comparable to that of urbanised places, yet the wage disparity is enormous. As a result of the rising cost of living and housing prices in Sabah, buyers are compelled to discover the finest region to allocate themselves in any city. Price and household income are the only factors that can be used in their decision-making process over time (Said et al., 2016). Furthermore, with a population of 3.26 million people, Sabah is Malaysia's second-most populous state, which may have an impact on affordability. This is in line with Choy, Ho and Mak (2015), who indicated that the growing population of Malaysia will drive up demand for housing, resulting the continuous increase in property prices. The rising cost of land (RM 147.4) per sqm in Sabah also would have an impact on housing market affordability as supported by Kamal, Hassan and Osmadi (2016) found that land price and regulatory hurdles as construction expenses play a role in determining housing affordability. Apart from that, the highest rental rate in Sabah (4.01) compare to Sarawak (3.66) demonstrates that the ratio of the median annual rental yield to the median house price in Sabah is continuing to rise in all districts, resulting in a decrease in housing affordability (National Properties Information Centre, 2020).

CONCLUSION

From the above explanation, the descriptive analysis of housing affordability shows that most all the states by each region Malaysia facing the phenomena of unaffordable housing price. This study is hoped able to contribute towards understanding of affordability. Further studies could help government in regulating effort to ensure the affordability level and high house ownership rate among people will improve in the future.

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