

Price to Income Ratio of Housing Affordability

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ABSTRACT

There are many approaches to measure housing affordability. The approaches are Price to Income Ratio (PIR), Rent to Income Ratio (RIR), Housing Expenditure to Income Ratio, Market Basket Measure, Quality Based Measure and Residual Income Measure. Price to Income Ratio (PIR) is often used as indicators of measuring housing affordability. The objectives of this research are to investigate housing affordability in Pulau Pinang by means of the Price to Income Ratio (PIR). The sample of this research comprises individuals who own a house at Flat Setia Vista, Relau, Pulau Pinang. The convenience sampling technique is used for this research with Binary Logistic Regression method as its analytical tool. The findings indicate that PIR for housing affordability in Pulau Pinang is 9.5. It means that PIR for residences in Flat Setia Vista, Relau, Pulau Pinang is high and they are afford to own a house in Pulau Pinang.

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INTRODUCTION

Affordability can be defined as a person's financial capacity to obtain something. According to (Norazmawati Md. Sani, 2007), if a person's income is sufficient to cover payments for a house and other household expenses, then the person can be said to possess housing affordability. Housing affordability is usually used to determine whether a person's income is enough to pay the monthly installments for a house. It is important to have a measurement for housing affordability so as to be able to determine whether a person has the financial means to purchase a house. Housing affordability is measured in terms of the price to income ratio. Increases in house prices cannot drift away from growth in the income of prospective buyers for an unlimited period of time. If house prices were to exceed the growth in income, there will come a time when households can no longer afford to purchase a home, and demand will then drop, thus leading to a reduction in prices (Andre, C., 2014). PIR is defined as the ratio of the current market value of the housing unit that a

household intends to purchase (i.e. Current Market Value of Housing Unit) to the total yearly income of the household (i.e. Total Annual Income of Household). For households belonging to the low income and middle income groups, the PIR is the ratio of the Mean Free Market Price of a Housing Unit to the Mean Annual Household Income.

Methodology:

Owners of low-cost houses at Flat Setia Vista, Relau, Pulau Pinang were selected as the sample for this research (Picture 1). The houses were purchased by them in 2014 at prices ranging from RM 40,000.00 to RM 45,000. SP Setia Sdn. Bhd. had built 165 housing units, each having three (3) bedrooms and a floor space of 650 square feet. For this study, the convenience sampling technique was employed together with the Binary Logistic Regression as an analytical tool.

The PIR was employed in this research to evaluate housing affordability in Pulau Pinang. The PIRs of the individual respondents are given below.

$$PIR = \frac{HP}{Y}$$

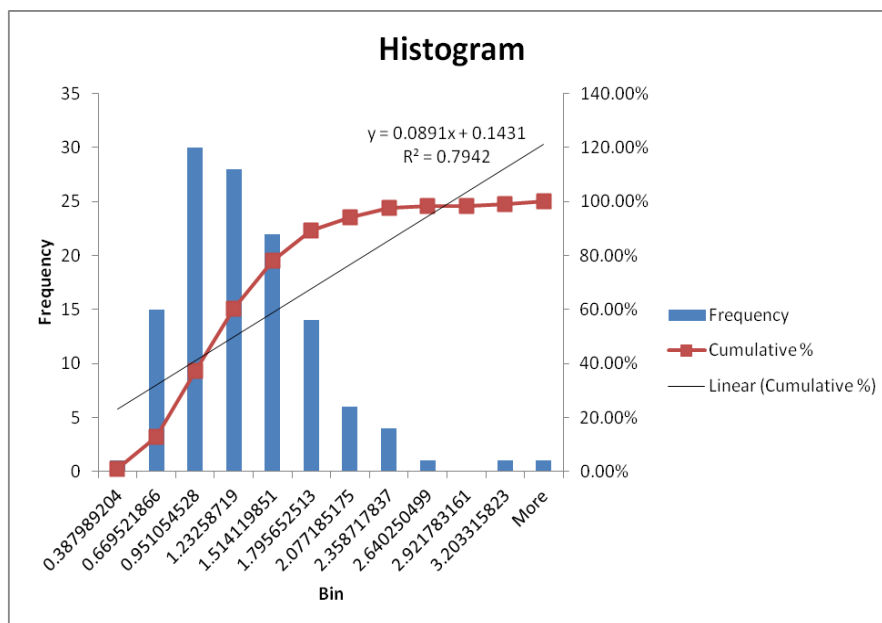
$$\text{Price Income Ratio} = \frac{\text{Current market value for housing unit}}{\text{Total household annual income}}$$



Picture 1: Flat Setia Vista, Relau, Pulau Pinang (http://www.malaxi.com/map_penang.html (accessed October 2014).

Table 1: Price to Income Ratio.

| Bin | Frequency | Cumulative (%) |
|----------|-----------|----------------|
| 0.387989 | 1 | 0.81% |
| 0.669522 | 15 | 13.01% |
| 0.951055 | 30 | 37.40% |
| 1.232587 | 28 | 60.16% |
| 1.51412 | 22 | 78.05% |
| 1.795653 | 14 | 89.43% |
| 2.077185 | 6 | 94.31% |
| 2.358718 | 4 | 97.56% |
| 2.64025 | 1 | 98.37% |
| 2.921783 | 0 | 98.37% |
| 3.203316 | 1 | 99.19% |
| More | 1 | 100.00% |



Graph 1: Price to Income Ratio.

RESULTS AND DISCUSSION

As can be seen in Table 1, the PIR for housing affordability in Pulau Pinang is 9.5, while the PIRs for the respondents who own units at Flat Setia Vista, Relau, Pulau Pinang are considered to be higher.

This is confirmed by Graph 1, which shows the R^2 value as 80%, which indicates that the residents at Flat Setia Vista, Relau, Pulau Pinang have a high PIR so they can afford to purchase a house in Pulau Pinang. The respondent is medium income people with household income is more than RM3,000 per month (Norazmawati, M.S., 2012). This finding corresponds with a study by (Lau, K.M. and S.M. Li, 2006), which reported that in Beijing for 2002 the PIR for low income, middle income and high income earners was 13.1, 9.24 and 3.68, respectively, thus indicating that those earning a low income have a

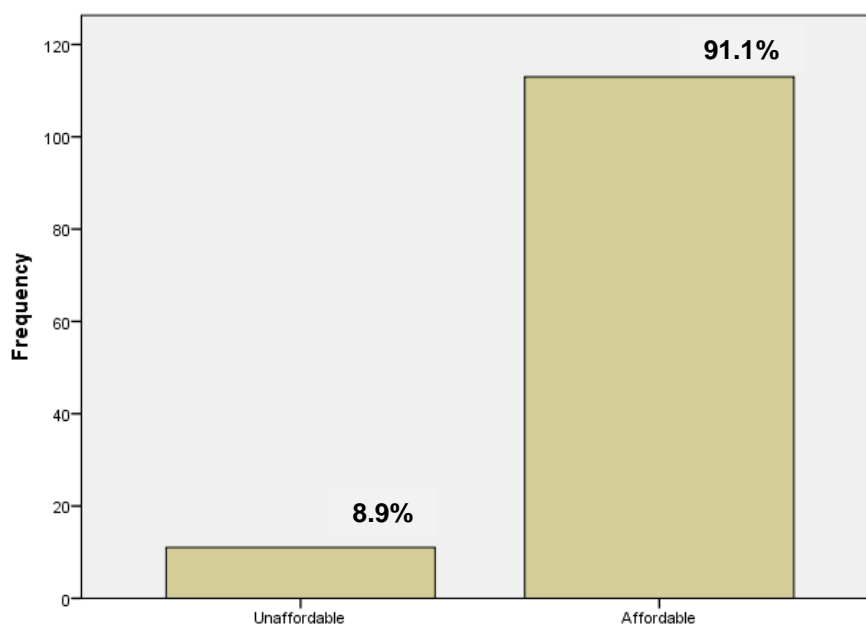
higher PIR compared to those earning medium and high incomes. The PIR for housing in Taiwan has normally been roughly 4 or 5, but this affordability index shot past 13 during the late Eighties when house prices tripled (Chang, C.O., 2001), following an increase in house prices in Beijing. In view of the fact that the prices of houses for low income earners are higher in comparison to houses for medium and high income earners, therefore low income earners can only afford to rent instead of buy a house.

Table 2 shows that the research sample comprised 124 respondents from Flat Setia Vista, Relau, Pulau Pinang.

Graph 2 shows that out of the 124 respondents, 91.1% of them can afford to own a house in Pulau Pinang, while a mere 8.9% of them cannot afford to do so. In other words, most of them have the means to buy a house.

Table 2: Level of Affordability.

| Level | Frequency | Percent (%) |
|--------------|-----------|-------------|
| Unaffordable | 11 | 8.9 |
| Affordable | 113 | 91.1 |
| Total | 124 | 100.0 |



Graph 2: Level of Affordability.

Conclusion:

From the above explanation, it is obvious that the Price to Income Ratio (PIR) of 9.5 for the respondents at Flat Setia Vista, Relau, Pulau Pinang indicate that they can afford to own a house in Pulau Pinang. The respondent is medium income people with household income is more than RM3,000 per month and no have a child. The houses were purchased by them in 2014 at prices ranging from RM 40,000.00 to RM 45,000. This is because the government has fixed the prices of the houses after taking into consideration their household expenditure. Hence, the role and support of the

government is vital in determining the affordability of a person to own a house.

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