

Measuring Affordability of the Middle Income Group for Residential House Price in Real Estate Sector of Rajshahi, Bangladesh

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Abstract

Housing affordability has been an indicator of socio-economic status. Due to the rapid urbanization of developing countries like Bangladesh the housing demand is always on a high. This increasing demand opposite to a lack of supply makes houses unaffordable for the middle income groups in the metropolitan cities like Rajshahi. This research is carried out to examine the level of housing affordability of the middle income groups in Rajshahi by using Price to Income Ratio (PIR) approach. PIR is applied to the residential units provided by the Real Estate agencies, which reveals that these are moderate to severely unaffordable for the target group. It is hoped that this paper could be able to provide a clear understanding useful insight on housing affordability for the middle-income group of Rajshahi.

Keywords: Housing affordability; Price to Income Ratio; Middle Income Group; Rajshahi.

1. Introduction

Housing has been a shared global experience over many decades especially in the developing countries like Bangladesh. This housing question is more severe in the metropolitan areas. A huge percent of total population are living in the cities and also migrating day by day due to rapid urbanization. According to the 5th population census of 2011, among the total population 76.7% live in rural and 23.3% live in urban[1].

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But being one of the major divisional cities the urban population in Rajshahi district was 32.93 percent[2]. The rate of rural to urban migration is relatively higher in Rajshahi. Among the total rural to urban migration 17.83 percent is taking place in Rajshahi [3].

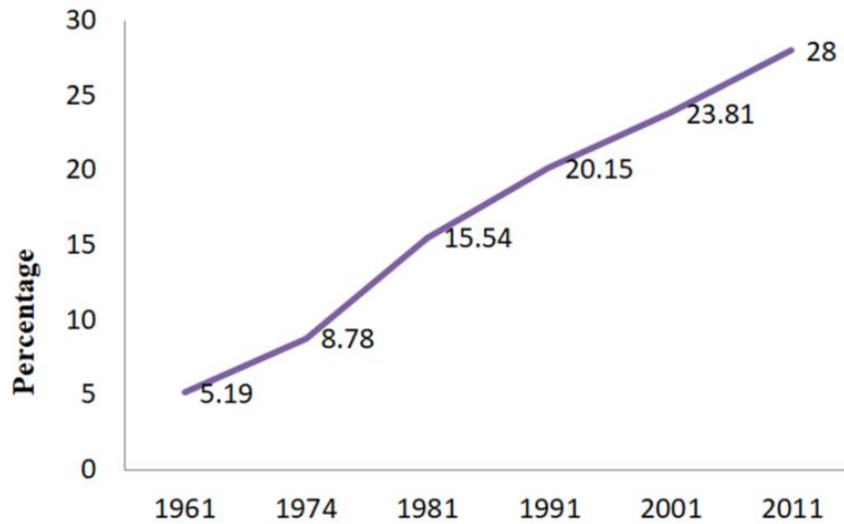


Figure 1: Level of urbanization [2]

The increasing growth rate of urban population raises some major issues, and housing is one of them. This migrated and increased population seeks for a permanent shelter. Statistics shows that from 2001 to 2011 in Rajshahi district, the total number of households have increased about 130722 and the number of urban household has increased about 23751[2]. But not all of the households are owned by the residents. So, it can be said that there is a booming demand of housing in Rajshahi. In oppose to the increasing demand there is lack of supply, which creates a gap. The lone efforts of government cannot mitigate the gap properly. For tipping the balance the private sectors like real estate agencies emerges and take it as an opportunity of profitable business. Thus the question of “Affordability” becomes the major issue

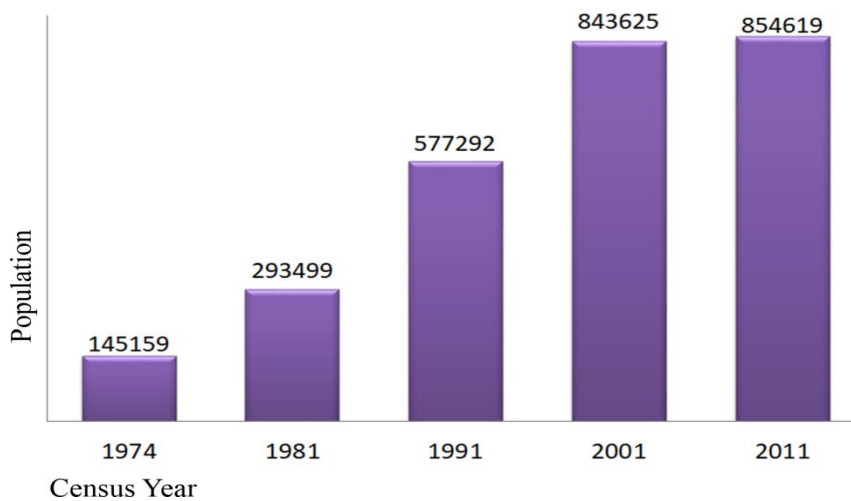


Figure 2: Urban Population Variation of Rajshahi, 1974-2011[2]

According to the real estate and developers Association, Rajshahi (REDA) there are 48 registered developers currently working. The number is quite higher in respect of Rajshahi and provides an idea of housing demand in Rajshahi. The prices at which the developers are selling the residential units are quite high. The current per square foot price ranges between 3400- 4000 BDT. Only the higher income groups are the target group of the developers. Although the major part of economic activities is served by the middle income groups in Rajshahi, but surprisingly they are mostly deprived in different sectors including housing. In these circumstances owning a house becomes very difficult and major concern for the middle income families to ensure quality life. But the housing affordability problems of that group usually do not get proper attention either in real estate sectors or in policy formulation. Thus the housing affordability of middle-income group is decreasing day-by day and also the formal housing market in Rajshahi is failing to provide affordable housing for the middle-income groups. Only enabling the moderate income groups to afford an acceptable housing standard[4]. The middle-income groups struggle to maintain a minimum standard of living and largely rely on rental housing rather having houses of their own. So, this paper reveals the current situation of housing affordability of the middle income group in respect to the residential house price specifically in the real estate sector of Rajshahi.

2. Literature Review

The term “Housing affordability” means the ability to afford a decent home without impairing their ability to spend on non-housing expenditures. The concept of housing affordability is to ensure the housing provided is affordable by every income earner group, as it is the single largest expenditure item in the budgets of most families and individuals. The range of affordability varies with the income earned .So, there should be a provision of affordable houses people of different income range.

2.1. Economic Categorization

Some examples of such categorization are:

Table 1: Economic categorization

Economic categorization based on	Low income	Middle income	High income
per capita daily consumption[5]	<\$2	\$2–\$20	>\$20
per capita daily consumption[6]	<\$2	\$2–\$10	>\$10
Monthly household income[7]	Below 31000 BDT	31000–250000 BDT	Above 250000 BDT
Monthly household income[8]	5,000–13,199 BDT	13,200–99,999 BDT	Above 100000 BDT

The question of affordability is directly related to the economic condition. The houses affordable for the higher income households can be severely unaffordable for relatively lower income households. Thus the economic categorization is a pre-requisite of measuring affordability. There is no universal approach of defining economic class. The income and expenditures are not same all over the world. But there are some studies conducted to define the economic class based on per capita daily consumption, monthly house hold income.

Moreover the economic groups are also categorized based on average monthly income. The bottom 40 percent people earn 10,657 BDT, middle 50 percent 25,763 BDT and the top 10 percent 147,388 BDT [9].

2.2. Measuring Affordability: “Price to Income Ratio (PIR)” Approach

Housing affordability depends on balancing housing and non-housing expenditures. Like economic categorization there is no universal way to measure affordability either. But there are six approaches identified to measure housing affordability such as 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.[10]. In all the approaches, ‘household income’ is one of the main determinants of affordability. So, an income based approach “Price to Income Ratio (PIR)” is used to assess and measure housing affordability. Price To Income Ratio (PIR) could be defined as the ratio of median house prices to median familial disposable incomes in percentage or years of income.[10]. For low income group and middle income group, a PIR method is the ratio between Mean Free-Market Price of Dwelling Unit to The Mean Annual Household Income. This shows the different between different groups of income household. PIR provide a useful insight of the overall performance of the housing market for example, the total demand and supply of housing for a local market, and also the impact of market force.

$$PIR = \frac{\text{price of apartment}}{\text{annual income}} \tag{1}$$

There is no universal standard numbers for conducting PIR approach. However, the standards mentioned in the table are used as references to measure homeownership affordability in Rajshahi.

Table 2: PIR value for different income group [4]

Level of affordability	Accepted value of PIR
Affordable	3.0 or less
Moderately unaffordable	3.1 - 5.0
Severely unaffordable	5.1 and above

3. Methodology

This paper focuses on measuring affordability of home ownership of the people of Rajshahi. There are few models of measuring affordability. Among them the PIR model is used in this article, which is an income

based approach. Thus an economic category on the basis of household income is required for applying PIR on the selected area. Literature and on field survey was conducted for that purpose. The existing housing scenario of Rajshahi was analyzed and data regarding the market value of housing units provided by the private sector was collected through survey. Different zones are also identified the information collected from survey. Then a PIR value suitable for the context of Rajshahi was selected on the basis of previous literature and analysis. Finally the PIR tool is applied on the people of different economic class of Rajshahi to find the current scenario of affordability in case of home ownership.

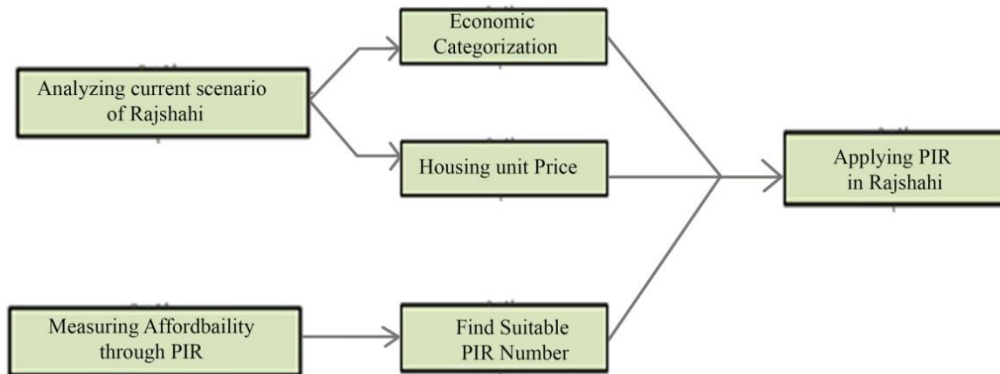


Figure 3: Flow diagram for measuring affordability for home ownership in Rajshahi (source: by author)

4. Housing Scenario of Rajshahi

The apartment price in Rajshahi continues to increase day by day along with other properties. The factors responsible for such increase are raise in income and urban population. These urban property values are measured keeping some factors in mind. Among all other factors the prominent are accessibility, distance to commercial center and public service units[11], security, environmental contamination [12] and transportation. These are also the effective factors for the real estate market of Rajshahi.

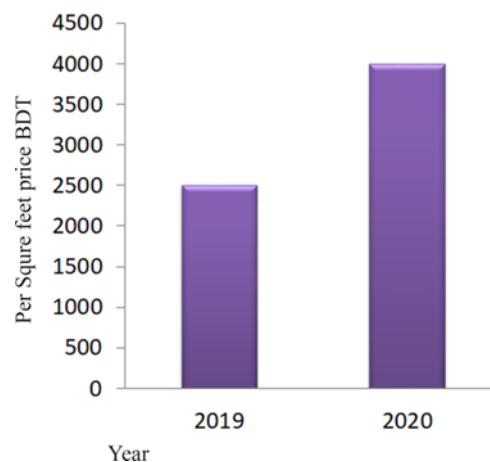


Figure 4: Growth of per square feet price in residential units, 2019-2020 (field survey)

The real estate price for a piece of residential unit involves evaluating the property as well as the various market conditions and financial factors[13]. Urban property value factor should also be considered. Keeping all these in mind a desktop survey was conducted. The survey reveals that the house price is found to be about BDT 4000 per square foot in the year 2020 but in 2019 house price was about BDT 2500 per square foot. The increase is quite significant considering the time phase of one year. This boost is a result of lack of supply opposite to rapid increase in demand. The apartment size in Rajshahi also varies from 1200 to 1600 square feet. To be more specific there 1200 and 1400 square feet apartments are on high demand. And there is very few demand of apartment above 1600 square feet. An important matter about the housing is not only evaluated by the structural characteristics of the property but also it is evaluated physically and environmental by other urban and spatial particularities surrounded [11]. To balance the housing market in a city, it is necessary to find similar environmental and social structure among localities, which will provide all kind of community, social and environmental needs.

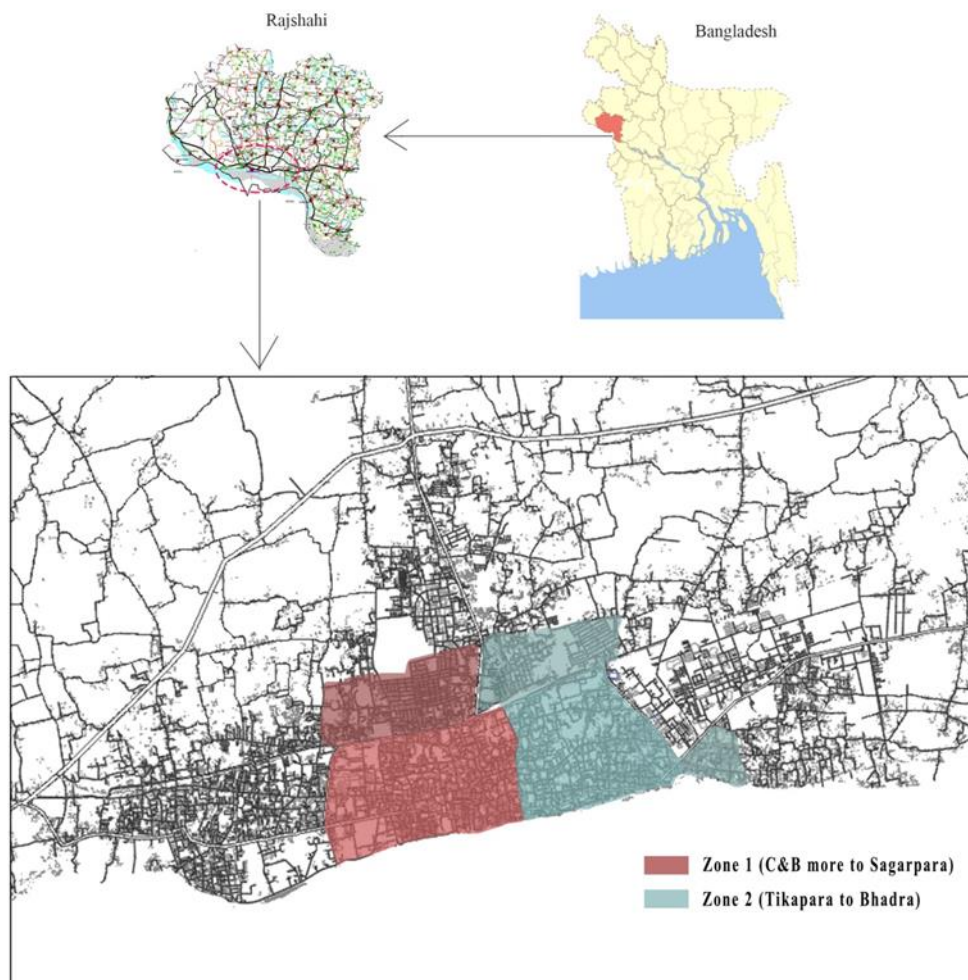


Figure 5: Position of the selected zones of Rajshahi, (field survey)

For analyzing affordability of residential house price in Rajshahi, zones of similar amenities and services should be identified first. As the real estate sector is relatively new in respect to Rajshahi it has not flourished all over the city. So the survey and the information of REDA indicate that the housing market of the real estate sector is

concentrated within the city center and adjacent localities. This is quite a small area considering the whole city. To measure affordability, the study area has been divided into two zones. Thus the process becomes easier, transparent and will ultimately reveal the real scenario.

Table 3: Zones and associated localities (field survey)

Zone 1	C&B more to Sagarpara
Zone 2	Tikapara to Bhadra

These studies are Dhaka focused and have not been updated. But district wise variation in economy or income is seen. So, a more specific and Rajshahi focused economic categorization should be presented. From the discussion on income groups, it can be assumed that the current household income of the middle-income households ranges between BDT 30000 to 100000. Overall, for the purpose of this study, the income groups in Rajshahi can be categorized as:

Table 4: Different income groups of Rajshahi (field survey)

Income group	Monthly income range BDT
Low income	<30000
Middle income	30000-120000
High income	120000+

Our main target group is the middle income group of Rajshahi. So the target income group needs a more accurate and specific categorization. So middle income group can be subdivided into:

Table 5: income based classification of middle income group (field survey)

Income group	Monthly income range BDT
Lower middle income	30000-50,000
Middle - middle income	50000-80000
Upper - middle income	80000-120000

5. Application of Price to Income Ratio (PIR) in the selected Zones

In these two distinctive zones PIR can be applied to assess the affordability of residential units in the real estate market. PIR will provide useful insight of the overall performance of the housing market in these zones. As it is a valid and easy approach to measure housing affordability.

Table 6: PIR and level of affordability of zone-1

Unit size (square feet)	Unit price (per sqft price X area)	Income group	Mean Monthly income BDT	PIR value	Level of affordability
1200	1200 x 4000= 4800000	Lower middle income	40000	10	Severely unaffordable
		Middle - middle income	65000	6.15	Severely unaffordable
		Upper - middle income	100000	4	Moderately unaffordable
1400	1400 x 4000= 5600000	Lower middle income	40000	11.66	Severely unaffordable
		Middle - middle income	65000	7.18	Severely unaffordable
		Upper - middle income	100000	4.66	Moderately unaffordable
1600	1600 x 4000= 6400000	Lower- middle income	40000	13.33	Severely unaffordable
		Middle - middle income	65000	8.21	Severely unaffordable
		Upper - middle income	100000	5.33	Moderately unaffordable

From the Table it is seen that PIRs according to income group have significant differences in case of zone 1. The house price-to-income ratio is much higher for the lower-middle and middle-middle income groups rather than for the upper-middle income groups. As a result these residential units of zone-1 are moderately unaffordable for the upper middle income group but severely unaffordable for the lower - middle income and middle - middle income.

Table 7: PIR and level of affordability of zone-2

Unit size (square feet)	Unit price (per sqft price X area)	Income group	Mean Monthly income BDT	PIR value	Level of affordability
1200	1200 x 3400= 4080000	Lower middle income	40000	8.5	Severely unaffordable
		Middle - middle income	65000	5.2	Severely unaffordable
		Upper - middle income	100000	3.4	Moderately unaffordable
1400	1400 x 3400= 4760000	Lower middle income	40000	9.92	Severely unaffordable
		Middle - middle income	65000	6.10	Severely unaffordable
		Upper - middle income	100000	3.96	Moderately unaffordable
1600	1600 x 3400= 5440000	Lower middle income	40000	11.33	Severely unaffordable
		Middle - middle income	65000	6.97	Severely unaffordable
		Upper - middle income	100000	4.53	Moderately unaffordable

In case of zone-2 the result are almost similar to zone-1. The PIR is much higher for the lower-middle and middle-middle income than for the upper-middle income groups. Thus it becomes moderately unaffordable for the upper middle income group and severely unaffordable for the lower - middle and middle - middle income groups.

The result shows that the market is more inclined to focus on the affordability of higher and higher-middle income groups than middle or lower-middle income groups.

6. Result and Discussion

To have a clear understanding of affordability among many other tools PIR can be very useful. So, the application of Price to Income Ratio (PIR) in Rajshahi indicates that the residential units sold by the private sectors are unaffordable for middle income households in case of ownership affordability. Especially the lower middle and middle-middle income groups are having more difficulties in owning a house. The PIR shows that the current houses are severely unaffordable for them and moderately unaffordable for the upper-middle income groups. But the on field scenario is different. Field survey indicates that 80 percent of the residential units are been sold out and most of the residential units are sold to the higher income groups, which firmly supports this research. But the middle income groups also seem to be buying a good number of residential units, which are unaffordable to them according to PIR. A deeper look reveals that, owning a residence has become symbol of social stability and shelter to fulfill all fundamental needs. That is why the middle income families are selling some of their properties to own a house. Mostly they are selling the land properties which they own in their villages, to have a house in the city. So, to enhance the housing affordability particularly for middle income people, both the government and the private organization needs to take the major initiatives. As private sectors like real estate and developers are playing a vital role in housing provisions, they need to be motivated to meet the housing demand of the middle income group within their range of affordability. Rather than looking for profit. Only the cooperation and coordination between several sectors can ensure progress in providing affordable housing for middle income people in Rajshahi city.

7. Conclusion

The explosive and uncontrolled growth of urban population and urban areas in Bangladesh creates an upward demand of housing. But lack of supply opposite to the boosting need is resulting in the housing affordability problems. Specifically, for the middle- and lower-middle-income groups the question of affordability becomes more severe. Modern day, affordable housing has become one of the most important phenomena not only for a planned growth of a city but also for the sustainable development. But in metropolitans housing of the middle income people has always been a challenge. It becomes more complex issue when People from different socio-economic background are to accommodate. That is why the assessment of housing scenario is a major concern for the government and the policy makers. The study indicates that PIR can be a very useful tool for this purpose. It is persistent and can provide the summary of long term scenario. The level of affordability of any economic group in a given study area can be measured using PIR. Applying PIR in Rajshahi gives an overall scenario of affordability of residential housing units and also widens the scope of further study on this sector.

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