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## **IMPACT OF POST-COVID 19 ECONOMIC CRISES ON AFFORDABILITY OF RENTAL HOUSING IN RAJSHAHI: AN ANALYSIS BASED ON RESIDUAL INCOME**

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### **Abstract**

Housing has always been a consistent and globally recognized urban challenge that remains largely unresolved. Meanwhile, affordability lies at the heart of most housing issues. The post-COVID global economic uncertainty has further enhanced this problem, as the living costs continue to rise at an alarming rate. In countries like Bangladesh, the situation is even more complex due to its large population. As being the third-largest metropolitan city, Rajshahi faces severe challenges in addressing housing affordability. In most of the cases household incomes and living standards have remained constant, but rising inflation and other post-COVID economic pressures have increased the cost of living. This has a direct impact on the rental housing affordability in Rajshahi. After paying for the unavoidable non-housing costs, the remaining amount is insufficient for house rents or expenditures, leading to a significant housing cost burden for renters. This paper employs a residual income-based method to examine the effect of the economic crisis after COVID on rental affordability in Rajshahi, offering a comparative analysis of the pre-COVID situation. It is anticipated that this paper will broaden future research opportunities and contribute to the implementation of the required policies to address this issue.

**Keywords:** Housing Affordability, Post-COVID Economic Crisis, Non-Housing Expenditures, Residual Income Approach, Housing Induced Poverty

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## **INTRODUCTION**

The concept of housing is more than just a shelter as it serves as an indicator of social safety, tenure security and economic status also. Consequently, owning house has always been a top priority all over the world, including Bangladesh. However, due to its sheer population, rapid urbanization and rural-to-urban migration, housing remains a critical concern for this developing country.

This housing issue also comes with the question of affordability, as purchasing a home is often the most expensive lifetime investment for most citizens. Moreover, there is a lack of supply than demand, thus the housing affordability stakes are always in the rise. As a result, most of the families find it almost impossible to afford a house of their own (Giti, 2018) . Adding to this, there are some non-negotiable mandatory expenses as a part of daily life. These expenses are there to meet the need of food, clothing, transportation cost, education, treatments, medicines and other basic human needs. And these expenses cannot be compromised.

Keeping the economic condition of the common in mind, it is very difficult for the mass people of Bangladesh to meet these expenses. Even when these expenses are managed, the amount left over is often negligible. On the other hand, the post covid scenario has worsened this situation. This pandemic has resulted in a global economic regression, which has been particularly detrimental to developing countries like Bangladesh. While developed nations may have the resources to tackle such crises, developing countries face significant hurdles. Due to this economic imbalance the expenses of all the daily necessities and commodities have increased. On the contrary, the income of the mass people in most of the cases has remained the same and even in some cases, decreased. Furthermore, the devaluation of local currency in international market has also added fuel to this burning scenario.

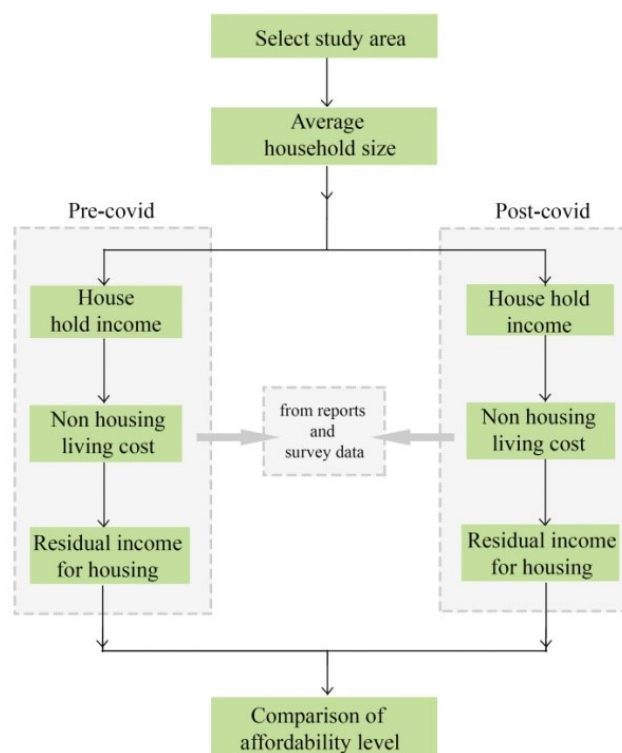
In the opinion of the general population, they are now spending nearly 1.5 times more to maintain a minimum standard of living than they did before the economic downturn. They claim that, as a result, it has become extremely difficult for them to cover regular expenses, let alone afford homeownership. While higher-income groups can manage these changes, middle- and lower-income groups believe they have fallen into a financial trap (Asaduzzaman & Hameem, 2021).

So, affordability of housing has drastically changed, it is far beyond their capacity. In consequence, a noticeable percentage of people had migrated from the metropolitan small towns or rural areas failing to meet the living cost. Therefore, this paper aims to investigate the impact of post covid economic crisis on the housing affordability level of the different economic group of Rajshahi, Bangladesh

## METHODOLOGY

This article focuses on analysing the housing affordability scenario after COVID, driven by the economic crisis. There are few models of measuring affordability but this paper adapts residual income-based approach. As this approach measures the income left for housing after meeting all the essential living expenses, making it well-suited to the research focus.

However, this scenario cannot be generalized necessitating the selection of a specific study area. The existing scenario of the selected area should be thoroughly analysed. Using the data, reports and field survey the average household sized income should be identified. Subsequently, the non-housing compulsory living cost must be analysed of the pre covid and post covid scenario. This can be done by survey, questionnaire, secondary data of economic inflation and price rising of daily necessities. This analysis of household expenses will provide the insights of residual income for housing of the pre- and post-COVID situation and also reveal the variation of affordability level of the selected study area.



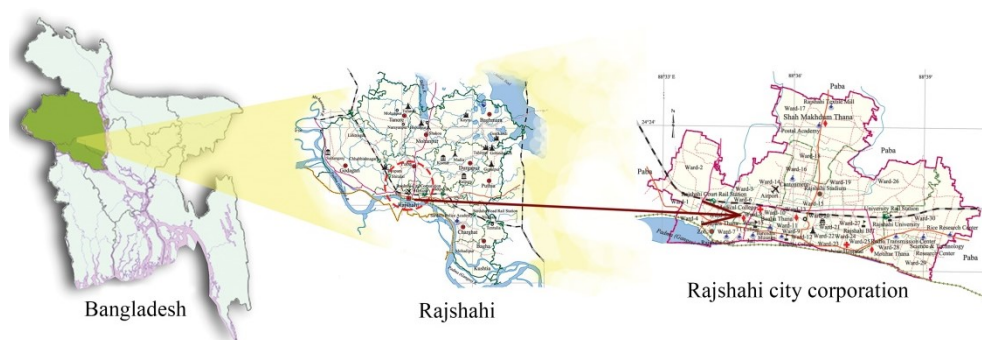
**Figure 2:** Methodology Flow Chart

Source: Author

## STUDY AREA PROFILE

The aim of this paper is to assess the impact of the post-COVID economic instability on housing affordability. However, this problem cannot be generalized and for this reason a particular study area is selected specifically on Rajshahi to conduct the study. Selecting Rajshahi was triggered by some background consideration, as it is the third metropolitan of Bangladesh (Hameem et al., 2023). And being one of the most prominent cities in the northern region people keep migrating. Thus, this city is rapidly expanding and leading to a growing demand for housing.

On the other hand, the living cost of Rajshahi compared to the other cities is at a considerable level. But this scenario was greatly affected by the COVID pandemic. The living expenses have not remained the same as before. During these 2 years living cost has increased a lot. This has an immense impact in the housing affordability level of the people of Rajshahi. These factors align with the objectives of this study, making Rajshahi an ideal area for examining the impact of economic instability on housing affordability.



**Figure 2:** Location of the study area  
*Source: Author*

## HOUSING SCENARIO IN RAJSHAHI

Over the last decade, Rajshahi has faced rapid housing demand. The urban population in Rajshahi district increase from 2595197 in 2011 to 2915013 in 2022 (Census, 2022). As a result the density has increased from 1070 to 1202 per kilometre (Census, 2022). Also the number of households has increased from 633758 to 775260 within the same period (Census, 2022).

**Table 1:** Rent index

Year	Rent Index
2018-2019	5038.53
2019-2020	5339.74
2020-2021	5610.64

*Source: Bangladesh Bureau of Statistics (BBS), 2021*

So, both the housing demand and urban area of Rajshahi is expanding simultaneously. This housing need comes with the question of affordability. Because on field ownership pattern indicates that majority of the houses are not owned by the users, rather rented. But the economic instability continuing from the covid situation added more to this problem. As an impact of the global economic regression most of the house rents have gone up. So, the renters have to pay more than what they were paying before this economic condition.

Similarly, individuals aspiring to own a house are facing comparable challenges. House prices have gone up within the past few years. The construction materials price and the labour cost have raised a lot. As a result, many potential buyers or builders are unable to afford to purchase or construct new homes.

**Table 2: Building Price Index**

Time	Building material price index
20-Jun	624.67
20-Jul	626.74
20-Aug	627.4
20-Sep	628.78
20-Oct	630.21
20-Nov	632.01
20-Dec	633.94
21-Jan	640.87

Source : Bangladesh Bureau of Statistics (BBS), 2021

So, there is an always increasing housing demand. But the supply is not up to the mark. Additionally, post-COVID global economic regression has fuelled the raising rents and housing prices and made it very difficult to afford for the people of Rajshahi. Thus, there should be a thorough investigation of the impact of the housing cost increase on the affordability level of Rajshahi.

## **AFFORDABILITY ANALYSES**

This increase of house price and rents has reached such a rate that it is shifting beyond the affordability level of the mass people of Rajshahi. There should be a proper assessment to reveal the on-field impact of this sudden inflation over housing affordability. In this paper, the residual income approach is followed to measure the affordability level. The residual income approach to assessing housing affordability considers it in terms of households' ability to maintain a minimum standard of living. This is reflected in their capacity to meet non-housing needs at an adequate level after covering housing costs. (Nwuba, C. C., & Kalu, 2018). The residual income approach stems from the understanding that housing costs are typically inflexible and take precedence over other expenditures, making the first claim on the disposable income of most households. (Stone, 2006).

It calculates the portion of income available for housing (mortgage payments or rents) after accounting for relevant non-housing expenditures for different household types. If the remaining amount is insufficient to cover housing costs, the household is considered to be facing a housing affordability issue. (Burke et al., 2011). For this purpose, a thorough investigation of income and expenditures of the target group must be done as these two are the key factors of affordability.

### **Economic Condition**

In any given scenario the key determinant of the affordability is monthly income. Because income defines the ability to spend for any goods or service. Survey data and on filed investigation was conducted to find out the income range of the people of Rajshahi.

This investigation indicates that:

- A majority of the people is service holders and their income has more or less remained the same.
- There has been no such event of salary increase both in government and private sector.
- Those who run business or shop owners also claims of their business profit declining.
- Workers and labors wage index has gone up a bit but their work frequency has decreased.
- Goods and agricultural producers sell their products with a low profit margin in the local market or to the middle man.

So, the income of the target area has remained the same or changed an inconsiderable amount. On the basis of income, the people of Rajshahi can be categorized into:

**Table 3:** Different Income groups of Rajshahi

<b>Income group</b>	<b>Monthly income range BDT</b>
Low income	<30000
Middle income	30000-120000
• Lower middle income	• 30000-50,000
• Middle - middle income	• 50000-80000
• Upper - middle income	• 80000-120000
High income	120000+

*Source: Asaduzzaman and Hameem, 2021*

### Non-Housing Expenditures

There is a considerable amount of population growth and economic inflation. The living cost has also increased with the same acceleration. Stats show that almost all sort of goods and necessities were affected by the post covid inflation. The table below provides data on price increases and inflation rates:

**Table 4: Inflation rate of non-housing expenditures**

Expenditure Items	2018-19	2019-20	2020-21
Food	281.33	296.86	313.86
(Inflation)	5.51	5.56	5.73
Non food	229.58	243.00	255.85
(Inflation)	5.43	5.85	5.29
Clothing & footwear	277.64	290.00	298.14
(Inflation)	8.78	4.45	2.81
Gross rent, fuel & lighting	206.98	220.70	228.29
(Inflation)	3.36	6.63	3.44
Furniture, furnishing, household equipment's & operation	265.25	282.67	298.15
(Inflation)	6.24	6.57	5.48
Medical care & health expenses	215.31	230.07	247.86
(Inflation)	2.88	6.86	7.73
Transport & communication	235.23	248.48	271.45
(Inflation)	7.51	5.63	9.24
Recreation, entertainment, education & cultural services	186.72	190.13	193.61
(Inflation)	1.67	1.83	1.83
Misc. goods & services	239.87	259.27	288.53
(Inflation)	7.18	8.09	11.28

Source: Bangladesh Bureau of Statistics, 2022

People are struggling to keep up with the rapid rise in the cost of living. The higher income group can somehow cope with it. But the middle-income group who shares the majority of the population finds it very difficult to meet their monthly expenses let alone the lower-income tier.

These stats and data also aligned with the on-field scenario. Survey was conducted to find out the pre-COVID and post covid living cost of the households of Rajshahi. Household size in Rajshahi district 4.09 in 2011 and 3.76 in the year 2022 (Census, 2022). So, four-member families from those different income categories were taken into considerations and their monthly expenses were carefully considered. This analysis included expenses from utility bill, transportation, food, clothing, medicine, accessories, education, recreation and others. Additionally, personal vehicle expenses, support staff expenses add with the higher and higher middle-income group and a comparison made of the pre covid and post covid prices of these items to find out the gross amount of the increased living costs.

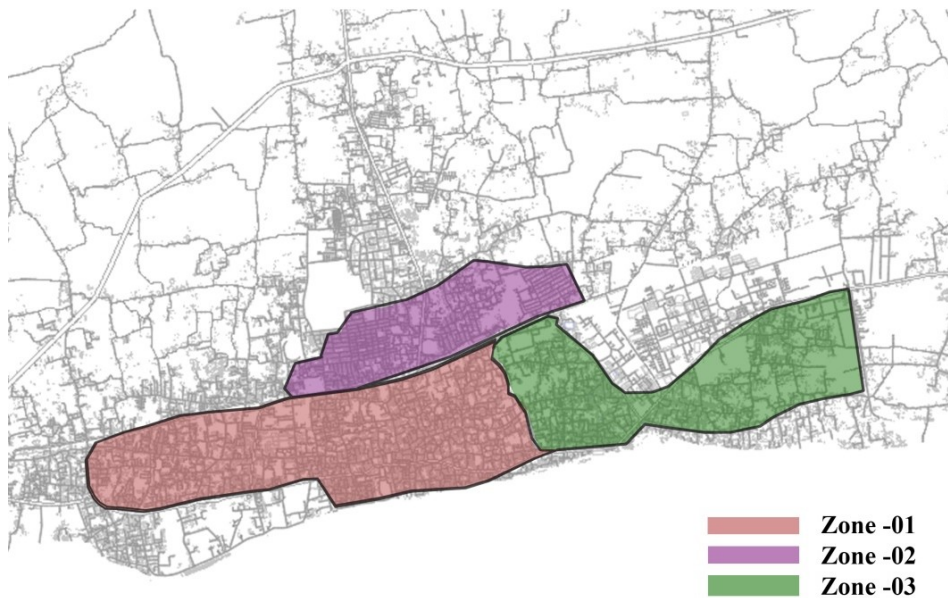
**Affordability Evaluation**

The living cost has risen incredibly high within these last few years. And these expenses cannot be compromised as all these items falls upon daily commodities. In these circumstances, the only area where compromises are often made is housing. Housing affordability has had a downfall in respect to the increased living cost. So, the comparison of affordability over these pre- and post-COVID situation is presented below:

**Table 5:** Residual income of different income groups of Rajshahi

Time frame	Income group	Monthly income (BDT)	Expenditures (BDT)	Residual income (BDT)
Pre covid	Low income	<30000	18000	12000
	Lower Middle income	30000-50,000	18000-32000	12000-17000
	Middle - middle income	50000-80,000	32000-55000	17000-25000
	Higher - middle income	80000-120,000	55000-85000	25000-35000
	High income	120000+	85000+	35000+
Post covid	Low income	<30000	24000	6000
	Lower Middle income	30000-50,000	24000-37000	6000-13000
	Middle - middle income	50000-80,000	37000-60000	13000-20000
	Higher - middle income	80000-120,000	60000-90000	20000-30000
	High income	120000+	90000+	30000+

*Source: Field survey and Author's Calculation*



**Figure 3:** Different zones of Rajshahi on basis of house rents

*Source: Author*



In order to evaluate rental affordability in Rajshahi, the study took into account the variations in house rents across different zones and income groups. Rajshahi, like any other city, has diverse rental prices depending on the location and size of the houses, as well as the income levels of residents. To obtain a comprehensive understanding of rental affordability, the study collected data on house rents from various zones and categorized them based on income groups. By comparing these rental rates with the residual income, the study aimed to determine how affordable housing was for different segments of the population in Rajshahi. That is why different zone was identified in respect to the house rental level. Where “Zone 01” consists of area between Shaheb Bazar to Laxmipur, “Zone 02” consists of Uposhohor Residential area and Padma Residential area and finally “Zone 03” includes Sagarpara to Rajshahi university area. Moreover, the denatal data has been collected from those areas. This analysis shed light on the affordability dynamics in the city, considering the financial constraints faced by residents in relation to the rental prices they encountered. The findings contributed to a better understanding of the housing market in Rajshahi and could inform policy decisions and interventions aimed at improving rental affordability for the local population.

**Table 6:** Affordability level of different income groups of Rajshahi

Zones	Income group	Residual income (BDT)	House rent (BDT)	Affordability level
Zone 1	Low income	6000	7000-10000	Unaffordable
	Lower Middle income	6000-13000	10000-15000	Unaffordable
	Middle - middle income	13000-20000	12000-15000	Moderately unaffordable
	Higher - middle income	20000-30000	15000-20000	Affordable
	High income	30000+	20000+	Affordable
Zone 2	Low income	6000	8000-12000	Unaffordable
	Lower Middle income	6000-13000	12000-18000	Unaffordable
	Middle - middle income	13000-20000	18000-20000	Unaffordable
	Higher - middle income	20000-30000	20000-25000	Affordable
	High income	30000+	25000+	Affordable
Zone 3	Low income	6000	6000-8000	Moderately unaffordable
	Lower Middle income	6000-13000	8000-12000	Moderately unaffordable
	Middle - middle income	13000-20000	12000-15000	Affordable
	Higher - middle income	20000-30000	15000-20000	Affordable
	High income	30000+	20000+	Affordable

Source: Field survey and Author's Calculation

## **RESULT AND DISCUSSION**

Housing affordability remains a persistent issue in Rajshahi, and the post-COVID economic crisis has further worsened the situation. The analysis conducted reveals that the economic inflation caused by the pandemic has rendered housing unaffordable for the lower- and middle-income groups in Rajshahi. Conversely, the higher middle- and higher-income groups have managed to cope more effectively, demonstrating the uneven impact of economic fluctuations on different income segments.

Traditionally, it is recommended that individuals allocate approximately 30% of their monthly income to their housing costs. However, due to the prevailing economic uncertainty, other essential non-housing expenses, such as food, transportation, and utility bills, have experienced significant increases. These non-negotiable expenses are crucial for individuals and cannot be compromised. As a result, the residual income left after meeting these expenses is far below the recommended 30% threshold for the lower- and middle-income groups in Rajshahi.

This phenomenon, commonly known as housing cost burden, highlights the challenges faced by the lower- and middle-income groups in meeting their housing needs amidst the post-COVID economic uncertainty. The above analysis further indicates that in zone 01 and zone 02 the rental amount is a burden for lower- and middle-income people. But in zone 03 the rent is comparatively lower. The burden of housing costs, coupled with the rising non-housing expenses, has put a considerable strain on their financial well-being and overall quality of life.

## **CONCLUSIONS**

The findings indicate that the post-COVID economic climate has had adverse implications for housing affordability, particularly for lower to middle income group of Rajshahi. Addressing this issue requires comprehensive strategies that take into account the unique challenges faced by these income groups. It is crucial to implement measures that mitigate the housing cost burden and ensure access to affordable housing options for these segments of the population.

Promoting equitable and sustainable housing in Rajshahi necessitates a multi-faceted approach. This includes exploring avenues for increasing the supply of affordable housing units, enhancing financial assistance programs, and fostering partnerships between government agencies, private sector stakeholders, and non-profit organizations. Additionally, investing in infrastructure development and urban planning initiatives that prioritize affordable housing can contribute to long-term solutions. By acknowledging the specific housing needs and financial constraints of the lower- and middle-income groups, Rajshahi can strive towards creating a more inclusive and affordable housing market. This will

not only improve the well-being of individuals and families but also contribute to social and economic stability within the community.

## DISCLOSURE STATEMENT

The authors declare that they have no conflicts of interest related to this research.

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