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Housing Condition and Affordability of Ready-Made Garment Workers: A Case Study on Dhamsona Union, Savar

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Abstract

Ready-made Garment is the largest manufacturing industry in Bangladesh and has a huge contribution to our economy. Though many workers are engaged in this sector, no proper initiatives for their accommodation have been adopted so far by the government and Bangladesh Garment Manufacturing and Export Association. Affordable and suitable housing is associated with the health and well-being of the garment worker. This study explores the housing affordability of the garment workers at Dhamsona Union, Savar Upazila using three methods- the housing cost approach, the non-housing cost approach, and the housing plus transportation index. Results show that in all the approaches, nearly 84%, 58%, and 39% of the respondents live beyond their affordability range and overall, 62% of the respondents are living in housing beyond their affordable limits in terms of their income. The housing quality of the workers lags far behind the international standard of worker housing. As the land price and housing rent are very high, they are forced to reside in substandard housing with inadequate housing facilities with their small income. Along with measuring housing affordability, this study also evaluates the current housing situation of garment workers who are living and working in the Dhamsona Union of Savar Upazila. The findings of this research can be used by government and non-government organizations in policy planning and implementation to ensure a decent and healthy housing environment and fulfilling the International Labour Organization standards.

Keywords: Housing Affordability, Ready-Made Garment Workers, Housing cost approach, Non-housing cost approach, Housing plus transportation (H+T) Index

Introduction

The ready-made garment (RMG) industry of Bangladesh is the country's most profitable foreign exchange earner with around 4621 clothing industries, and roughly 1960 factories (42.4%) located in and around Dhaka (BGMEA, 2020). It contributes billions of dollars to the country's GDP each year by employing around 4.4 million garment workers, 80% of whom are women (Fathi, 2019). For the past 25 years, Bangladesh's garment industry has been a key export division and a major source of foreign cash, and it continues to play an important role in our economy (Ahmed, 2004). Currently, the country generates roughly

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$5 billion in revenue each year from garment exports and become the world's second-largest exporter of garment items after China (Fathi, 2019; BGMEA, 2020).

4.4 million workers in this business are critical to attaining middle-income status (Shibli, 2019). This sector has contributed to earning export revenues, job creation, poverty reduction, and women's empowerment (Sikdar, Sarkar & Sadeka, 2014). Despite all these great aspects of this industry, garment workers have to live in poor conditions that are below the minimum threshold (Zaman, 2015). They are compelled to live in inadequate housing because they cannot afford sufficient housing facilities with their low income due to the high cost of land and housing rent.

A better environment can significantly contribute to the highest potential performance outcomes from employees and deliver more profit to the industry (Absar, 2002). Housing adequacy is a human right and one of the most basic requirements for a person to organize his ideas, discipline his actions, stable his mind, and embark on meaningful objectives and programs (Kundu, 2004). Housing, after food and clothes, is one of the basic rights guaranteed by Bangladesh's constitution, providing not just protection and shelter but also a sense of belonging to the owner (Hasan, 2002).

Even though RMG employees earn millions of dollars for the state, the state does not provide any benefits, such as better housing, whereas housing plays important role in family well-being, health, safety, and quality of life, thereby increasing worker productivity (Kakon, et al., 2016). Housing is a stabilizing influence in everyday life, forming the foundation of a person's ability to function and deal with a variety of life situations (Dunn & Kyle, 2007). Housing is an important determinant of ensuring good health and well-being (Rolfe et al., 2020). Despite this, a large section of Bangladesh's population, including ready-made garment workers, lives in substandard housing that lacks basic utilities and facilities (Sikdar et al., 2014).

Almost half of the garment workers in and around Dhaka live in slums and deplorable conditions, with a worsening urban environment marked by crime and violence, overcrowding, and drastically reduced access to housing and services (Muzzini & Aparicio, 2012). Whereas, according to the International Labour Organization (ILO) Workers' Housing Recommendation, (1961), minimum space allocated per person or per family, safe water, adequate sewage, and garbage disposal systems, appropriate protection against heat, cold, damp, noise, and fire, adequate sanitary and washing facilities, ventilation, cooking, and storage facilities, and natural light are among the standards of housing for workers (Kundu, 2004). There has been no attempt to assess their ability to obtain adequate accommodation within their financial means. They cannot afford even the most basic of living standards, let alone any kind of quality of life (Zaman, 2015). The Bangladesh Garment Manufacturers and Exporters Association (BGMEA) has refused to provide housing for its employees (Kundu, 2004). Though a few years ago, Bangladesh Bank and BGMEA started a trial initiative in Ashulia, Dhaka, to provide cheap accommodation for RMG employees, with Bangladesh Bank agreeing to give 60% of the cash for hostels that will be built for garment workers on land held by factory owners. Any form of development program aimed at the working class must begin with an understanding of their status, the gravity of the problem, and their capabilities and limits to adopt a solution. This research aims to investigate the housing affordability of garment workers residing in Dhamsona Union which is very close to

Dhaka Export Processing Zone (DEPZ) and the present condition of their housing using the ILO specified standards for workers.

Objectives and Methodology

The core objective of this study is to measure the housing affordability of the ready-made garment workers and to study their present housing conditions in the study area. Neither quantitative nor qualitative method is alone sufficient to capture such a complex and multi-dimensional issue. A quantitative approach has been used to measure housing affordability. It has been measured using- three methods- the housing cost approach, the non-housing cost approach, and the housing plus transportation (H+T) index. The housing affordability of garment workers is measured with the help of these three approaches. Knowing the affordability helps in further studying their housing conditions and the adjustments that are made by the workers for their livelihoods. A questionnaire survey has been conducted for this. The qualitative work along with quantitative data has provided information about the present housing condition of the respondents.

The rationale of this approach is that the qualitative data will support the results obtained from quantitative data about housing affordability and address the research questions- what is the housing affordability condition of the garments worker and how are they adjusting to the affordability issue?

Literature Review

Various studies have brought to light the shortage of sufficient and standard accommodation for apparel industry workers. Absar (2002) examined the BGMEA's initiatives to improve workers' living conditions and the response of trade unions in this regard. According to her research, the International Labour Organization (ILO), the United Nations Children's Fund (UNICEF), and the United Nations Development Programme (UNDP) collaborated on three housing projects for garment workers in Dhaka, which were implemented by the BGMEA. She concluded that women workers have restricted purchasing power and low access to housing, health, sanitation, and transportation due to wage discrimination based on gender. Hoque, Debnath, and Mahmud (2006) conducted a study on the road safety of garment industry workers in Dhaka and their housing locations. According to their study, most garment factories are located along major arterial highways, and a huge number of garment workers reside in the outskirts, due to a lack of strong land use planning and supervision. According to the report, people with modest salaries are driven to live in slums near the city periphery, and those who live alone pay roughly 40% of their income on housing rent and are forced to reside outside the built-up districts, producing a mess system. Sultana and Nazem (2020) discovered that because of their low wages, many garment workers are forced to reside in slum communities and pay exorbitant housing rents. Shawall and Ferdous (2014) conducted a significant study that focused on the factors that influence garment workers' housing site choices in the Mirpur region of Dhaka City. They looked at things including house rent, utility availability, monthly household income, distance from the workplace, social security, reliance on the family decision, size of housing unit, communal living, and community facility availability, among other things. The study also looked at the relative importance of the highlighted aspects, which could aid

policymakers and developers in planning any form of home development project for workers. House rent, availability of utility services, monthly household income, distance from the workplace, and social security were the top five considerations chosen by garment workers. The most crucial finding of the research was that the workers could not buy any typical house with their pay, which points the way forward in terms of finding solutions to this affordability issue. Before that, it is necessary to comprehend the standard of garment worker housing, which is discussed in this paper. Kundu (2004) notes that a big proportion of the garment workers of Dhaka are migrants, making it difficult for them to obtain a decent housing space. According to Wiest, Khatun, and Mohiuddin (2003), more than 60% of the garment workers live alone and this also causes them difficulty to get a decent residence. All parties, including the BGMEA, industry owners, government, and the labor associations, must prioritize the sustainability of the RMG labor force, particularly those who can be termed, blue-collar employees. Approximately 80% of workers, largely women, live in tight accommodations, with half of their earnings often going towards rent (Zaman, 2015).

Theoretical Aspects

Concept of Housing and Housing Affordability

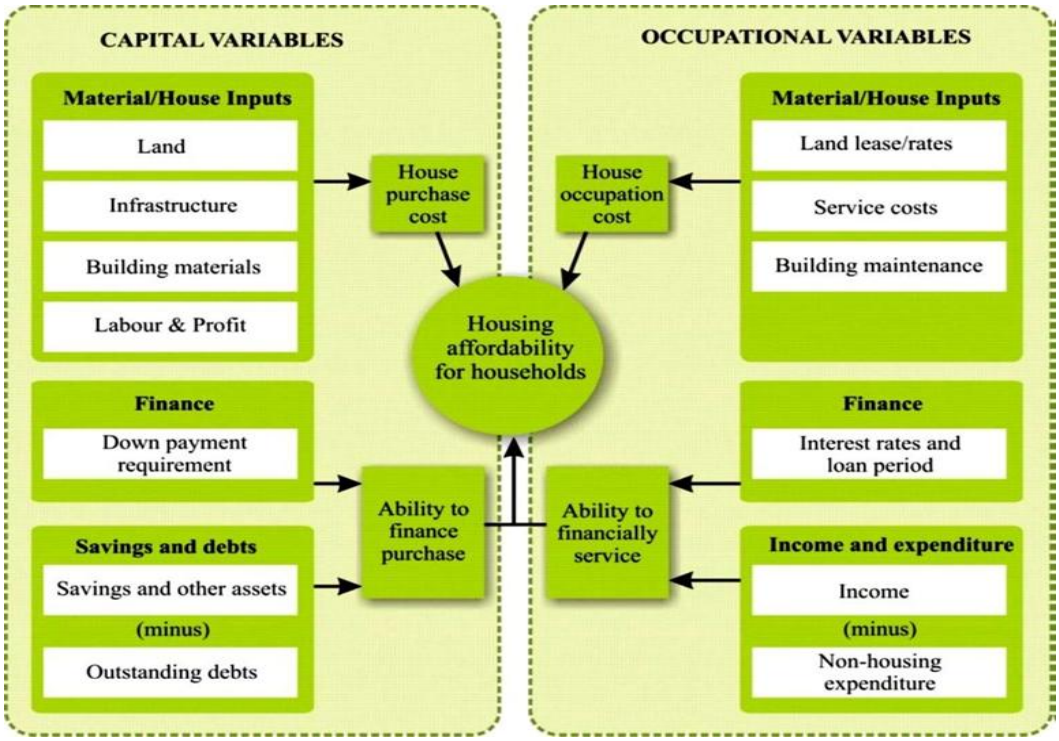
Housing encompasses not only a simple form of shelter, but also the aspects of comfort, convenience, and amenities that are necessary for an individual's or family's mental and social well-being (Hasan, 2002). Housing is an enclosed habitat in which people find protection, feel safe and secure from hostile forces, and may function with enhanced comfort and satisfaction in terms of privacy for the individual and his family (WHO, 2018). According to Hasan (2002), the major components of housing are- land, labor, infrastructure and utility services, building materials, and housing finance.

Affordability is described as the ability and willingness to pay for anything in general (Hulchanski, 1995). Maclennan and Williams (1990) define affordability as such- "Affordability is concerned with securing a given level of housing (or different standards) at a price or a rent that does not impose, in the perspective of some third party (usually government), an unjustified burden on household incomes,". On a macro level, affordability is concerned with the distribution of housing prices, house quality, income, household borrowing ability, public policy affecting housing markets, conditions affecting the supply of new or refurbished housing, and people's decisions about how much housing to consume in relation to other goods (Stone, 2016). Lerman and Reeder (1987) examine the affordability of acceptable housing, they make a distinction between those who can and those who cannot. Because the concept of affordability depends on several aspects and it is critical to distinguish between the numerous concepts of affordability and the seemingly endless meanings of the issue.

Components of Housing Affordability

Affordability is the most important factor in finding housing for a family, and it is heavily influenced by some variable factors that work at the basis of any dwelling (Stone, 2016). UN-HABITAT (2011) discovered these components and classified them into two categories: Capital factors (home purchase cost) and Occupational variables (cost associated with keeping the house) (Figure 1).

For this study occupational variables in terms of rent, and other non-housing expenditures have been considered, and owning housing is not covered.



Source: UN-HABITAT, 2011

Fig. 1: Components of housing affordability

Housing Affordability Index

The term 'Housing Affordability Index' is used to describe the affordability of housing. The affordability index varies around the world. The phrase "affordability" is a complicated notion that has gained popularity in recent decades, replacing the concept of "housing need" (Ndubueze, 2007; Linneman & Megbolugbe, 1992; Whitehead, 1991; Maclennan & Williams, 1990). This word refers to a person's capacity to purchase a house, and at its most basic level, housing affordability is defined by housing expenses in relation to household income (Swartz & Miller, 2002). The ratio of housing costs to income, or the household financial costs connected with housing, is commonly used to determine affordability (Hancock, 1993). Even though the term "affordability" is at the heart of the argument over providing enough housing for everybody, there is still no agreement on how to define and quantify affordability (Hui, 2001). The rental expenditure to income ratio, or the percentage of income spent on housing is extensively used, with 25% to 30% of income being the upper limit of affordability (Hulchanski, 1995).

Housing affordability, according to Hulchanski (1995), can be estimated using the following "Affordability Index" equation:

$$\frac{\text{Expense on House Rent per Month} \times 100}{\text{Income per Month}}$$

If any respondent's current affordability index is less than 30% of their monthly income, they are deemed to be living within their means. It is regarded as unaffordable otherwise (Zaman, 2015). The affordability index value is presented in Table 1.

Table 1: Housing affordability index value

Affordability Index Value	Status
≤ 30%	Affordable
(31-50) %	Moderately Unaffordable
≥ 50%	Severely Unaffordable

Source: Zaman, 2015

Approaches for measuring housing affordability

Chowdhury (2013) stated that among all the approaches to measuring housing affordability, so far two of them are being used widely all over the world, namely:

- The Housing Cost Approach
- The Non-Housing Cost Approach

- **The Housing Cost Approach**

This is the most popular approach to measuring housing affordability and is referred to as the housing "expenditure-to-income ratio." A "rule of thumb" requirement of no more than 25%-30% of monthly household income spent on housing is considered appropriate and affordable (Whitehead, Monk, Clarke, Holmans & Markkanen, 2009). Hulchanski (1995) cites six ways in which the housing cost approach method (rule of thumb) has been used:

a) Expenses incurred by the household;
b) Trend analysis and comparison of various household types;
c) Managing public housing by establishing eligibility criteria and subsidy amounts in rent-geared-to-income housing;
d) Definition of housing need for public policy purposes;
e) Prediction of a household's ability to pay rent or mortgage; and
f) As a selection criterion in the decision to rent or provide a mortgage.

There are some limitations to this approach, such as the lack of consideration for housing quality and overcrowding, the lack of a clear rationale for the affordability benchmark, and the lack of consideration for non-housing costs, among others, but it is widely used because of some advantages (Gabriel, Jacobs, Arthurson, Burke & Yates., 2005).

- **The Non-Housing Cost Approach**

This approach, also known as the "residual income-based approach," and promoted most notably by the University of Massachusetts-Boston professor Michael Stone, views

housing affordability through the lens of basic non-housing consumption (Gabriel et al., 2005). This approach is also known as the shelter poverty approach, the after-housing poverty approach, the market-basket approach, and so on (Ndubueze, 2007; Whitehead et al., 2009; Nepal, Tanton & Harding, 2010). This method is concerned with the relationship between non-housing costs and a household's ability to maintain an acceptable standard of living (Chowdhury, 2013). The residual method is based on the idea that housing affordability is the ability of households to meet the cost of housing while also meeting other basic living expenses, i.e., the income left over after paying for housing (Chaplin & Freeman, 1999; Stone, 2006; Whitehead, 1991).

Now the formula for measuring housing affordability by this approach is given below:

- ✓ Affordable = (Monthly Income – Housing costs) = Residual Income ≥ Non-Housing cost
- ✓ Unaffordable = (Monthly Income – Housing costs) = Residual Income ≤ Non-Housing cost

- **Housing Plus Transportation (H+T) Affordability Index**

The H+T Index compares a typical household's income to an estimate of the typical cost of housing and transportation in different neighborhoods. It characterizes a neighborhood as inexpensive if housing and transportation expenditures account for 45% or less of a household's income. This figure takes into account an existing rule of thumb that households should spend no more than 30% of their income on housing and adds another 15% for transportation costs (Guerra & Kirschen, 2016).

The following formula is used for measuring H+T Affordability Index:

$$\frac{\text{Expense on House Rent per Month + Expense on Transportation per Month} \times 100}{\text{Income per Month}}$$

According to Guerra and Kirschen, (2016) if the housing plus transportation affordability index value is less than 45% then the housing is considered affordable and if it goes equal to or beyond 60% then it is severely unaffordable (Table 2).

Table 2: H+T affordability index value

H+T Affordability Index Value	Status
≤ 45%	Affordable
(46-60) %	Moderately Unaffordable
≥ 60%	Severely Unaffordable

Source: Guerra and Kirschen, 2016

Study Area

Dhamsona Union is the largest union of Savar Upazila according to its population. It is bounded on the north by Shimulia Union and Gazipur Sadar Upazila, on the west by Dhamrai Upazila, on the south by Pathalia, and Ashulia Union, and on the east by Yarpur Union. The Bangshi River flows on the west side of Dhamsona Union. The area is characterized by an irregular elevated landscape, with adjacent low-lying areas primarily used for agricultural and water bodies. Dhaka Export Processing Zone (DEPZ) is located

in Dhamsona Union under Ashulia Police Station, Savar. DEPZ plays a vital role in this union's economy. Table 3 represents a summary of the study area. In the study area, 44 garment industries are situated where about 26904 workers are employed.

Table 3: Demographic information of the study area

Sector	Information
Area	8098 acre, 32.77 sq.km
Population	308024
Sex Ratio	114:100
Density	9399.57 person per km
Total Garment Industries	44
Total Garment Workers	26904
Number of Holdings	92036
Road Length	112 km
Number of Mauzas	15
Number of Villages	31
Total Revenue Income	20085405 Tk
Total Expenditure	18180000 Tk
Literacy rate	75%

Source: Savar Upazila, 2021

Housing Affordability Measurement of the Garment Workers

Measuring the housing affordability of the garment workers of Dhamsona Union is one of the major tasks of this research. Housing affordability can be measured through the 'Housing Cost Approach or Ratio Method', the 'Non-Housing Cost Approach or Residual Method', and the 'Housing Plus Transportation Cost Approach'. Here, in the following sections, these three approaches have been used for measuring the housing affordability scenario of the workers in the study area. The analysis has shown the perspective of both the single-worker households (bachelor workers) and family households.

Application of 'The Housing Cost Approach (Ratio Method)'

This approach is widely referred to as the housing 'expenditure-to-income ratio' approach and is the most common measure of approach. A 'rule of thumb' standard of no more than 30% of household monthly income being spent as monthly housing expenditure is deemed appropriate and affordable (Whitehead et al., 2009). Here, in this research, a 30% benchmark is used for the housing affordability index measurement as a standard and a 45% 'thumb rule' is used as a standard for the 'housing plus transportation (H+T)' affordability index measurement (30% as housing cost and 15% as transportation cost) of the respondents. Table 4 represents the affordability status of the single worker household, family household, and a combination of both the single and family worker household.

Table 4: Housing affordability index of the respondents

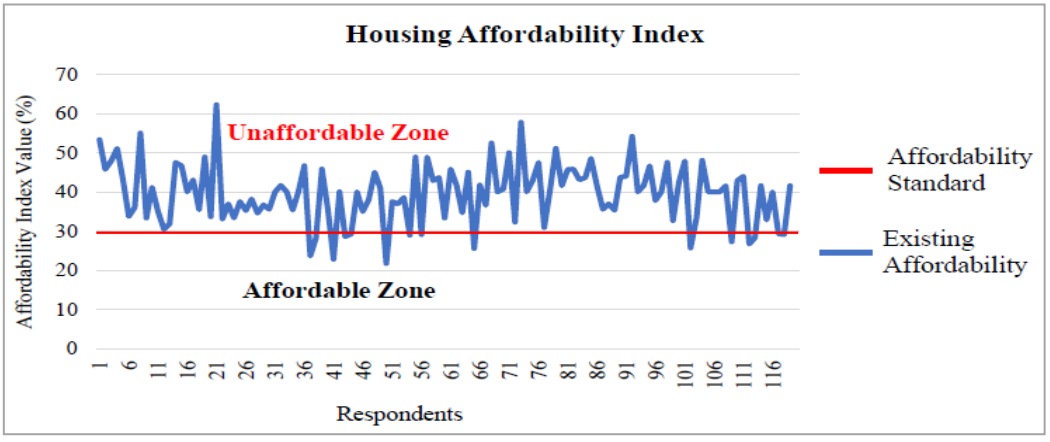
Affordability Index Value	Percentage of Respondents	Status
Single-worker Household		
≤ 30%	16.18%	Affordable
(31-50) %	75.2%	Moderately Unaffordable
≥ 50%	8.62%	Severely Unaffordable
Family Household		
≤ 30%	11.76%	Affordable
(31-50) %	82.35%	Moderately Unaffordable
≥ 50%	5.88%	Severely Unaffordable
Overall		
≤ 30%	14.28%	Affordable
(31-50) %	78.15%	Moderately Unaffordable
≥ 50%	7.56%	Severely Unaffordable

Source: Field Survey, 2021

Here, in the study area, only 14.28% of the respondents live within the affordability range which means their monthly housing purpose cost is less-equal 30% of their monthly income. That is to say, 85.71% of the respondents live beyond the affordability range, so they expense more than 30% of their income for housing purposes per month. Again, 78.15% of the respondents use (31-50)% of their monthly income for housing purposes which is known as moderately unaffordable and 7.56% of the respondents have to use more than 50% of their monthly income for housing and they are identified as living in severely unaffordable housing condition.

Figure 3 represents the affordability standard with a straight line and presents the affordability of each of the 116 surveyed respondents. Only the respondents whose affordability index is found below the affordability standard line, have affordable housing as per the Housing Cost Approach.

Figure 3 shows the affordability scenario of the overall respondents of the study area:



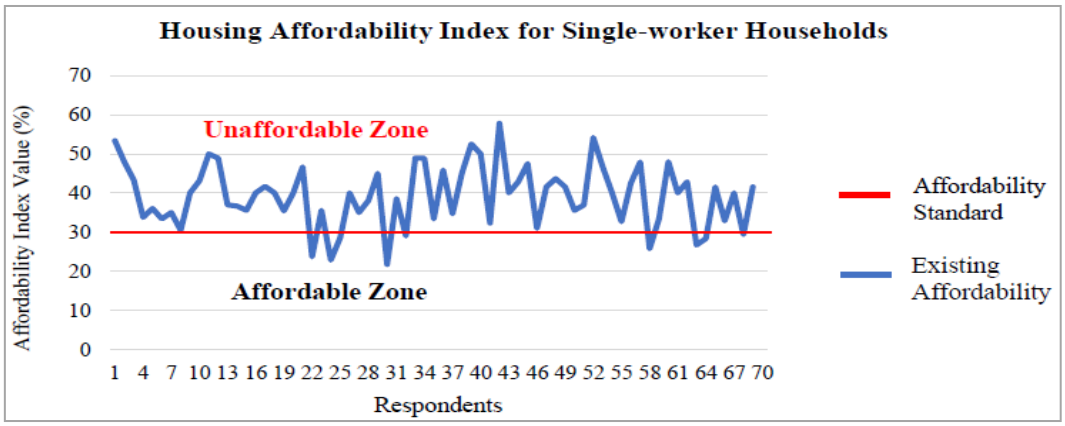
Source: Field Survey, 2021

Fig. 3: Housing Affordability Index

(a) Single-worker Household

Again, Table 4 also shows that, for single-worker households, almost 16.18% of the respondents live within the affordability range (≤ 30% of monthly income) and 83.82% of the respondents live beyond the affordability benchmark, among them, for 75.2% of the respondents, the affordability index value is between (31-50)% which is known as moderately unaffordable, and 8.62% of the respondents have severe housing affordability problem.

Here, Figure 4 shows the affordability scenario of the single-worker household respondents of the study area:



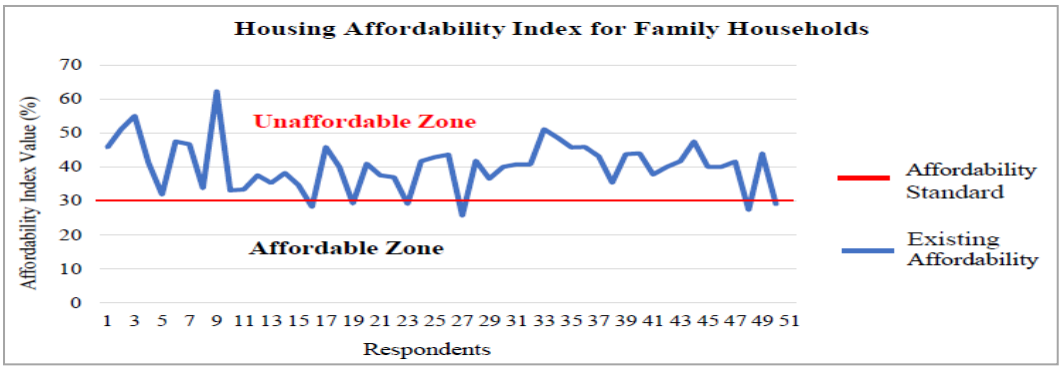
Source: Field Survey, 2021

Fig. 4: Housing Affordability Index of the single-worker households

(b) Family Household

Here, Table 4 also shows that, for family households, 11.76% of the respondents live within the affordability range and 88.24% of the respondents are facing affordability problems here. Among the 88.24%, 82.35% of the respondents have moderate unaffordability and 5.88% have severe housing unaffordability issues.

Figure 5 shows the housing affordability scenario of the family household respondents of the study area.



Source: Field Survey, 2021

Fig. 5: Housing Affordability Index of the family households

Housing Plus Transportation (H+T) Affordability Measurement

✓ ***Information on Transportation***

From the study, it has been found that most of the respondents both male and female go to their workplace by walking (62.39%). They do not use any motorized or non-motorized vehicle to reach their destination. Almost 18% use cycle, 14.5% use van and 5% use bus to go their working place. The female workers generally move along with a group of co-workers on foot. Most of the respondents go to their workplace by walking, they live within a walkable distance from the factories. The maximum distance they cover is 4.5 km and the minimum is 0.2 km (200 m). The average distance from their workplace to home is almost 2 km. The average time required to reach the destination by walking is almost 22 minutes per day. From the study output, it has been found that 80.39% of the respondents have no transportation costs as they go to their workplace by walking and using cycles. 10.41% and 9.11% of the respondents count less than 500 Tk and (500-1000) Tk per month respectively for transportation purposes.

✓ ***Housing Plus Transportation (H+T) Affordability Index Measurement***

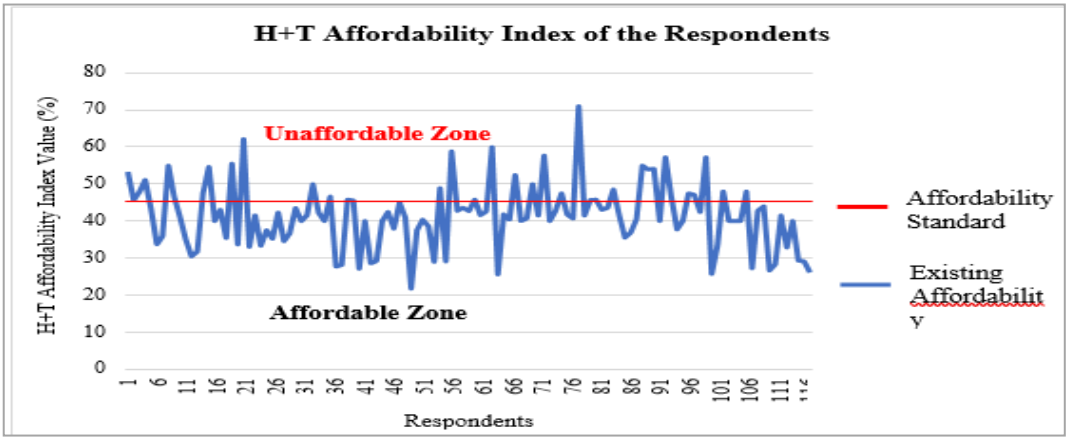
The H+T Index provides an estimate of the typical cost of housing and transportation in different neighborhoods and compares this estimate to a household or typical household's income. It describes a neighborhood as affordable if a given household would spend 45% or less of its income on housing and transportation costs. This number accounts for an existing rule of thumb that households should spend 30% or less of their income on housing and adds another 15% for transportation costs (Guerra & Kirschen, 2016). Here, the 'Housing plus Transportation (H+T) Affordability Index' of the respondents has been calculated by using the formula mentioned earlier in the Theoretical Aspects part.

Table 5: H+T affordability status of the respondents

H+T Affordability Index Value	Percentage of Respondents	Status
Single-worker Household		
≤ 45%	63.24%	Affordable
(46-60) %	35.29%	Moderately Unaffordable
≥ 60%	1.47%	Severely Unaffordable
Family Household		
≤ 45%	58.82%	Affordable
(46-60) %	37.25%	Moderately Unaffordable
≥ 60%	3.92%	Severely Unaffordable
Overall		
≤ 45%	61.34%	Affordable
(46-60) %	36.13%	Moderately Unaffordable
≥ 60%	2.52%	Severely Unaffordable

Source: Field Survey, 2021

According to the H+T Affordability Index formula and from the study output, it is found that almost 61.34% of the respondents live within the affordability range and enjoy no affordability issue (Table 5). On the other hand, 38.66% of the respondents live beyond the affordability range and have housing affordability problems. Among them, 36.13% of the respondents have moderate unaffordability problems and 2.52% have severe housing unaffordability issues. Figure 6 shows the overall housing plus transportation affordability scenario of the single-worker household respondents in the study area.

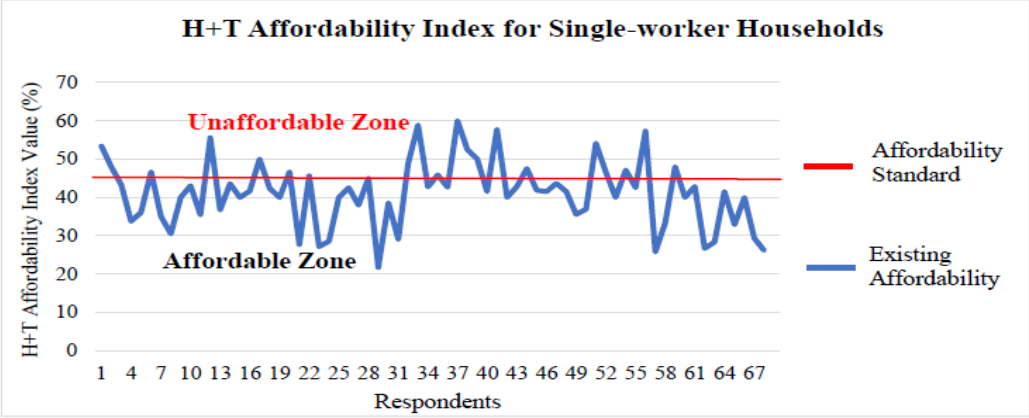


Source: Field Survey, 2021

Fig. 6: Overall H+T Affordability Index of the respondents

(a) H+T Index for Single-worker Households

Figure 7 shows that, for single-worker households, the percentage of the respondents enjoying affordable housing is 63.24% and the rest (36.76%) is facing a housing affordability crisis. Again, the percentages of the respondents having moderate unaffordability and severe unaffordability are 35.29% and 1.47% respectively.

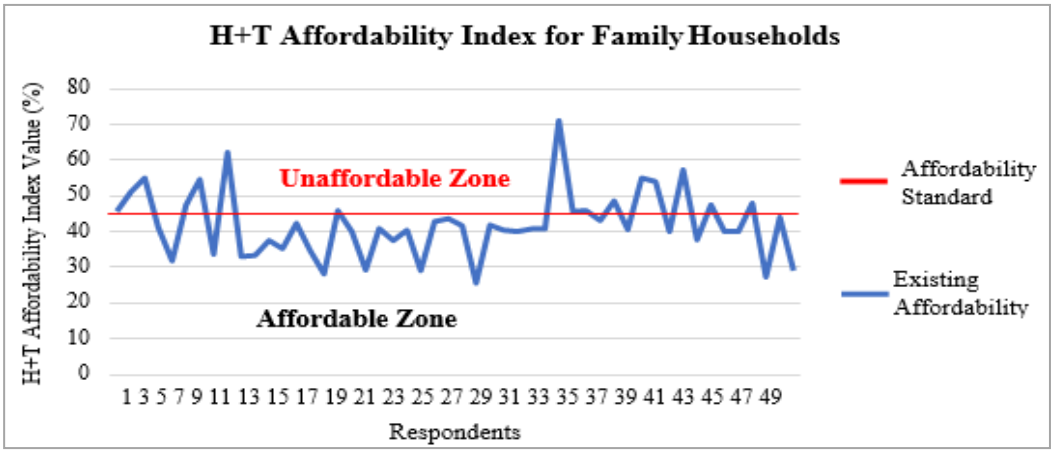


Source: Field Survey, 2021

Fig. 7: H+T Affordability Index for single worker households of the respondents

(b) H+T Index for Family Households

Figure 8 shows that almost 58.82% of the family household respondents live within the affordability range and 41.18% live beyond their affordability. Among these 41.18%, 37.25% of the respondents have moderate unaffordability issues and 3.92% have severe housing unaffordability problems.



Source: Field Survey, 2021

Fig. 8: H+T Affordability Index for family households of the respondents

Housing Affordability Measurement by using the 'Non-Housing Cost Approach' (Residual Income Method)

This method determines how much of a household's income is left for non-housing costs after accounting for housing expenses for various household types; if the amount left is insufficient for housing, the household has a housing affordability problem (Burke, Stone, & Ralston, 2011). In this study, residual income for each respondent was determined by adding up all of the respondents' non-housing expenses, including food, healthcare, leisure, educational costs, etc., and then subtracting the amount from the amount left after paying the house rent from the monthly income. From the calculation, it has been found that almost 58% of the respondents cannot meet their non-housing demands properly after paying for housing and have to pay more of their residual income for non-housing purposes or have to compromise with it. So, according to the 'non-housing cost approach, they are living beyond their affordability range and that is why the housing they are living in is considered unaffordable for them. On the other hand, almost 42% of the respondents pay less or equal to their residual income for meeting their non-housing demands after paying for housing. So, they are living within their affordability limit and the 'non-housing cost approach' has identified their present housing as affordable for them.

The housing affordability of the respondents has been calculated by using the formula of this approach mentioned earlier in the Theoretical Aspects part.

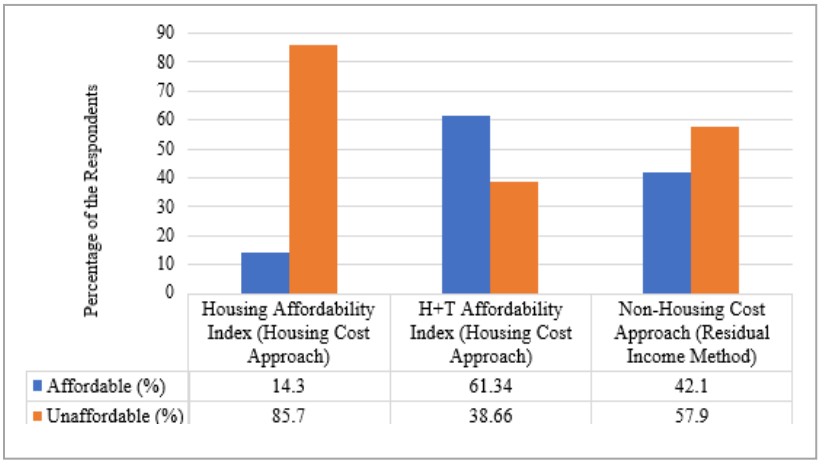
According to the 'non-housing cost approach', 45.6% and 37.2% of the respondents of

single-household and family-household respectively live within their affordability and around 42% of the total respondents are within affordability limit. So, they would have enough left-over of their income after paying for housing purposes for meeting all of their non-housing necessities. On the other hand, 54.4% of the single-household and 62.8% of the family household respondents get cost-burdened for meeting their non-housing needs after paying for housing, so housing is unaffordable for them.

Figure 9 shows the scenario of the respondents who get cost-burdened for meeting their non-housing demands after paying for housing or have to compromise with their non-housing demands and also shows the range of cost-burden for households. For single-households 29.7% of the respondents face (1001-1500) Tk shortage per month and for family-households, 51.6% of the respondents face the same amount of shortage per month for meeting all their non-housing needs properly after paying for housing costs. So, they must compromise with their non-housing needs, which hamper their basic needs of living and overall living standards.

Comparison among Housing Cost, Housing Plus Transportation Cost, and Non-Housing Cost Approach

Three different and most recognized approaches for measuring housing affordability have been applied in this research for housing affordability measurement of the ready-made garment workers living in the Dhamsona Union. In Figure 10, the housing affordability index of the 'Housing cost approach' has shown that only 14.28% of the respondents live within the affordability limit and 85.7% live beyond their affordability. Again, the 'housing plus transportation (H+T) affordability index' has shown that 61.34% live within their affordability and 38.66% of the respondents live beyond their affordability. Whereas the 'Non-housing cost approach' has found that 42% of the respondents live within their affordability and 57.9% live beyond their affordability. They have to adjust their cost of recreation, medicine, and education to afford their housing cost.



Source: Field Survey, 2021

Fig. 10: Comparison between two approaches of affordability measurement

Existing Housing Condition of the Garment Workers

In Bangladesh, there are no standards specified by the government or non-government organizations for the housing of workers. So, Housing condition has been studied based on the standards provided by ILO. As per the ILO's Workers Housing Recommendation, 1961, the below-mentioned standards should be available to a worker and his/her family members to ensure health and well-being:

- Per Capita Space Occupancy (PCSO)
- For single-worker households: 40 sq. ft/person
- For family households: 200-250 sq. ft. (for 5-6 persons) or 40-50 sq.ft/person (45 sq.ft. in average)
- Adequate sewage and garbage disposal Systems
- Adequate sanitation facilities
- Provision of adequate natural light and Ventilation
- Adequate cooking facilities
- Proper bathing facilities

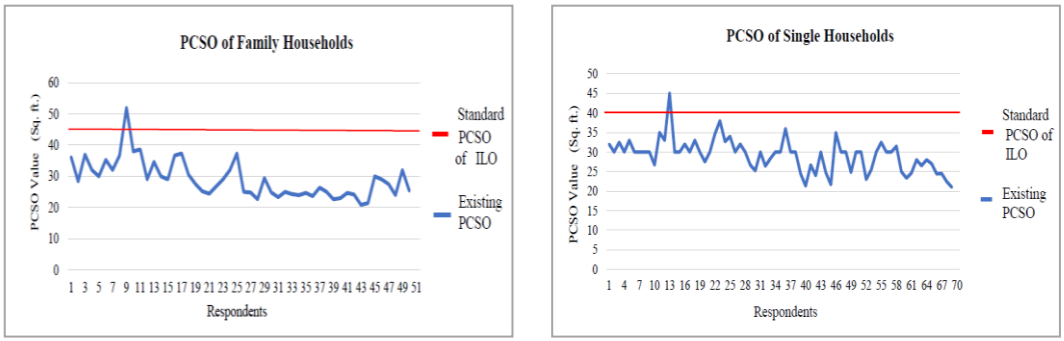
In the below sections, the present housing condition of the workers has been presented and a comparison with the ILO's standards has been prepared.

Measurement of Per Capita Space Occupancy (PCSO) of the Respondents

From the study data, it has been found that the average per capita space occupancy (PCSO) of the respondents in the Dhamsona Union is 29.13 sq. ft. The value is 31.06 sq. ft. for family households and 27.18 sq. ft. for a single household. According to 'ILO Workers' Housing Recommendation 1961 (No.115)', the minimum PCSO for a family household is 45 sq. ft./person and for a single-worker household, the value is 40 sq. ft /person. So, the ILO standard is much higher than the existing PCSO of the respondents and they live far beyond the international standard.

Comparison of Existing Housing Condition of the Garment workers with the Standards of 'ILO Workers' Housing Recommendations, 1961 (No.115)'

Although Bangladesh has almost 4621 garment industries in total and 4.4 million workers are working in this sector, Bangladesh does not have any laws, regulations, or standards for garment workers housing facilities (BGMEA, 2020). Bangladesh Labor Act, 2015 has not mentioned any directions regarding the housing provision of the garment workers or for other workers. It has only prescribed that the employers of the tea-industry workers have to manage the workers' housing facilities but did not mention any detailed guidelines about this fact. For this reason, this research uses international standards and recommendations for comparing the housing condition of the garment workers. That is why ILO standards have been considered for this research. Here, the existing housing condition of the garment workers is compared to the standards prescribed in ILO Workers' Housing Recommendations, 1961 (No.115)' (Figure 11).



Source: Field Survey, 2021

Fig. 11: PCSO of family respondents and single-worker respondents

As per the findings from the questionnaire survey (Table 6), it has been found that in the study area average per capita space occupancy is far below the standards of the ILO. Only 73% of the respondents have accessibility to sewerage facilities and 87% use shared toilets. Only 21% of the respondents have individual bathroom facilities, and the most alarming is that none of the respondents has fire safety measures.

Table 6: Existing housing condition of the garment workers in accordance with 'ILO Workers' Housing Recommendations, 1961 (No.115)'

Standards Prescribed by ILO	**Housing Scenario of Dhamsona Union**
Per Capita Space Occupancy (PCSO) ▪ For single-worker households: 40 sq. ft/Person ▪ For family households: 200-250 sq. ft. (for 5-6 persons) or 40-50 sq. ft/person (45 on average)	Average PCSO: 29.13 sq. ft/person ▪ For single-worker households: 27.18 sq. ft./Person ▪ For family households: 31.06 sq. ft./Person
Adequate sewage and garbage disposal systems	Have: 73% of the respondents Does not have: 27% of the respondents
Adequate sanitation facilities	Shared Toilet: 87% of the respondents Individual Toilet: 13% of the respondents
Provision of adequate natural light and ventilation	Have: 44% of the respondents Does not have: 56% of the respondents
Adequate cooking facilities	Shared Kitchen: 88% of the respondents Individual Kitchen: 12% of the respondents
Adequate fire protection measures	No fire safety measures at all
Proper bathing facilities	Individual Bathroom: 21% of the respondents Shared Bathroom: 79% of the respondents

Source: ILO, 1961 and Field Survey, 2021

Recommendations

This part of the study includes some recommendations and suggestions for implementing the programs and projects for the housing development of the garment workers. These recommendations are based on the results of the study analysis and the existing condition of the garment workers in the study area.

- Findings show that according to the Ratio Method and Residual Income Method, almost 84% and 58% of the respondents live beyond their affordability respectively. These data are showing the housing affordability crisis of garment workers. One of the major causes of this unaffordability issue is poor wage structure and less monthly income of the workers. A probable remedy for this affordability crisis of the workers can be to implement the 'wage scale of garment workers, 2019' properly, which has prescribed the minimum wage for a garment worker is Tk. 8000 per month (The Daily Star, 2020). It can be assumed that if the income ranges of the workers increase, they can be more capable of meeting their housing and non-housing costs more effectively.
- Again, 'Bangladesh Labor Act, 2015' has mentioned that the employers of tea-industry workers must provide housing facilities for their workers. The same regulation can be adopted for the garment workers, which may lead to solving their housing affordability problem to a large extent.
- As in 'Bangladesh Labor Act, 2015' there are no directions about housing facilities and standards for other industry workers, so 'ILO Workers' Housing Recommendations, 1961' is considered as the standard for housing of the workers in this research. The existing housing situation of the respondents is far lower than this standard. According to the study findings, the per capita space occupancy (PCSO) for single-worker households and family households in the study area are 27.18 sq. ft./person and 31.06 sq. ft./person respectively but the standard given by ILO is 40 sq. ft/person and (40-50) sq. ft/person respectively. If this standard has to follow, adequate housing facilities should be provided for the garment workers in the study area. Housing allowance can be provided for the workers or separate workers' colonies can also be built by the initiative of both the government and garment authorities.
- Again, ILO prescribed that each worker should have adequate sanitation facilities, natural light and ventilation system, cooking facilities, adequate fire protection measures, potable water supply provision, etc. But the existing housing condition of the respondents does not meet these standards at all. So adequate housing facilities should be provided jointly initiated by the government, garment owners, and BGMEA for the workers in the study area which can fulfill the minimum requirements of these standards and at the same time provide an affordable housing solution for them.

Conclusion

The ready-made garment industry in Bangladesh is a very sensitive area for the country's

economy. This industry makes a significant contribution to the economy. In contrast, the garment workers, who are the primary contributors to the huge progress of the economy, are being kept in the dark about their rights. They are not awarded with the importance that they should be. Therefore, the economic drivers of this country are living a measurable life while experiencing perpetual economic misery. As a result, there is an urgent need right now to think for them, work for them, and create a livable situation for them to flourish. The government should either enhance the minimum wage or provide them with better housing facilities because they are unable to afford their living. However, increasing the minimum wage is a contentious and ambiguous matter that has generated considerable controversy and complexity. It does not guarantee an improvement in the workers' standard of living. Rather than that, this should be financed by enhancing the workers' housing conditions. This will require a cooperative effort and a series of policy decisions on the part of the government, which should contribute significant inputs. Apart from this, the garment authorities and owner agencies have a basic responsibility to raise funds for their workers through donor organizations and local sources.

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