

## FOOD SECURITY AND SLUM DWELLERS OF KOLKATA: A CASE STUDY

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### ABSTRACT

*Food is a fundamental human right. Achieving food security for households is a prime concern for any country. As urban slum dwellers are still seen as marginalised section of the society, this study has focussed on this group. The study is based on primary data. A total of 105 households from seven number of slums are purposely selected for the study within Kolkata Municipal Corporation (KMC) area. The Household Food Insecurity Access Scale (HFIAS), an experiential measure of food security, is used to determine the food security status of slum households. According to the survey, there are 84.76% of households that are either mildly (32.38%), moderately (45.71%), or severely (6.66%) food insecure. Therefore, the current study reports a relatively high frequency of food insecurity.*

**Keywords:** Household Food Security, Food Access, Urban Slum Dweller, HFIAS.

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### Introduction

A healthy lifestyle requires enough food consumption, both in quality and amount. The Universal Declaration of Human Rights in 1948, the International Covenant on Economic, Social, and Cultural Rights in 1966 and the Convention on the Rights of the Child in 1989 all regard food security as a fundamental human right (FAO, 2006, p-4).

The 1996 World Food Summit, Rome defined food security as "...all people at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life" (FAO, 1996). Food security for an individual or household is not guaranteed by national or regional food security.

Contrarily, people experience food insecurity when they lack sufficient physical, social, or financial resources to purchase food. It remains closely connected to poverty (Tacoli & Fisher, 2013). Malnutrition is the observable consequence of food insecurity. Hunger is the unpleasant situation coming out from inadequate food energy consumption. A person or household is considered to be in poverty when they lack the means to maintain even the most basic of living standards (Gaur and Rao, 2020).

One in nine people on the earth, or an estimated 821 million people, did not have access to adequate food in 2017 to live a healthy life. Additional data based on the Food Insecurity Experience Scale indicates that 770 million individuals, or close to 10% of the world's population, experienced extreme food insecurity (FAO, 2018). Nearly 750 million people, or almost one in ten of the world's population, experienced extreme food insecurity in 2019. Current estimates of FAO, shows that there are nearly 690 million all over the world, who are hungry that is 8.9% of the world population (FAO, 2020).

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Dev and Sharma wrote "ensuring food security ought to be an issue of great importance for a country like India where more than one-third of the population was estimated to be absolutely poor and one-half of all children malnourished in one way or another" (Dev and Sharma, 2010, p-1) More than 217 million people are malnourished in India, according to the 2012 publication, *The State of Food Insecurity in the World*. Despite producing enough food to feed itself, India was unable to resolve the issue of persistent family food insecurity. (Radhakrishna and Reddy, 2016). Regardless of its huge economic growth and significant reduction in absolute poverty from 21.6% to 13.4% between 2011-2015, poverty remains widespread in India (Poverty & Equity Brief, 2020). India is ranked 94th out of 107 nations in the 2020 Global Hunger Index, with a score of 27.2, indicating a significant level of hunger. (Grebmer et.al, 2020).

In terms of food and nutrition security, urban areas in India generally appear to do better than rural areas, but in reality, high degree of intra-urban inequalities prevail there. (MSSRF, 2010). According to the 2011 Census of India, there were 65.49 million people living in slums, which made up 5.4 percent of the nation's total population and 17.4 percent of all urban dwellers (2011 Census). Even the most impoverished must purchase the majority of their necessities from the market because cities are known for their money-based economies. As a result, the issue of poverty is changed to one of food insecurity (Maxwell, 1999). Poor people are compelled to be marginalised in the slums. The current work is grounded on a survey in the slums of Kolkata. The term "slum" is widely used to describe informal settlements with unsatisfactory housing and deplorable living conditions. They are frequently crammed. Slums are typically the only sort of urban housing that the poor can afford and access (GOI, 2015).

Kolkata is one of the major cities in the nation where urban poverty is dominant. Slums house more than one-third of the city of Kolkata's inhabitants (2011). According to 2011 Census slum population of Kolkata (1409721) constitutes 31.35% of the total population and they are mainly found in some pockets of Kolkata (especially in north, north-east, central and western part). However these slum dwellers at large remain marginalized and underprivileged.

Several studies, have been prepared on food security and coping mechanisms at household level among various slum areas of the country in term of nutrition, gender disparity and women health (Agarwal and Sethi, 2009; Pravat A, 2012; Chatterjee et al, 2012; Gupta et al, 2013; Chinnakali, Upadhyay et al, 2014; Keshav, 2015; Baral, Upadhyaya and Jadav, 2017). But at Kolkata level, the study is limited. In his study, Maitra.C. (2014) uses an experience-based indicator of food security to examine the poverty -food security relation among slum households of Kolkata. Chaudhuri(2015) has analyzed urban poverty and the coping policies implemented by the poor households with reference to slum dwellers of Kolkata (Chaudhuri, 2015).

Taking all this into consideration, the current study is an endeavor to highlight the state of household food security in some selected slum areas of Kolkata.

### **Aims**

The study was carried out in Kolkata (KMC) to assess the level of food insecurity that exists at the household level.

### **Objectives**

- To separate the sample households into secure and insecure groups in terms of food access.
- To investigate the variables directly affecting the sample homes' level of food security.
- To classify insecure households into different severity classes based on their responses.

### **Materials and Methods**

#### **Study Area and Sample Selection**

The study was executed in seven different slums of ward number 38, Borough No.4 in North Kolkata in 2020-21. There are 19 slum pockets in Ward No.38 (D.G.Bustee Service Report, 2013, KMC). The study area of Ward no.38 has 503 slum houses with an approximate total population of about 3053. Mostly female participants aged between 18-50 years were selected for the study who participated actively in the household's food preparation and distribution. Non-probability quota sampling method was adopted for the survey, due to the fact that it can be finished quickly and is reasonably effective. A total of 105 households, or about 20% of the households in each slum, were chosen for the survey. Using a questionnaire, both primary and secondary data were gathered.

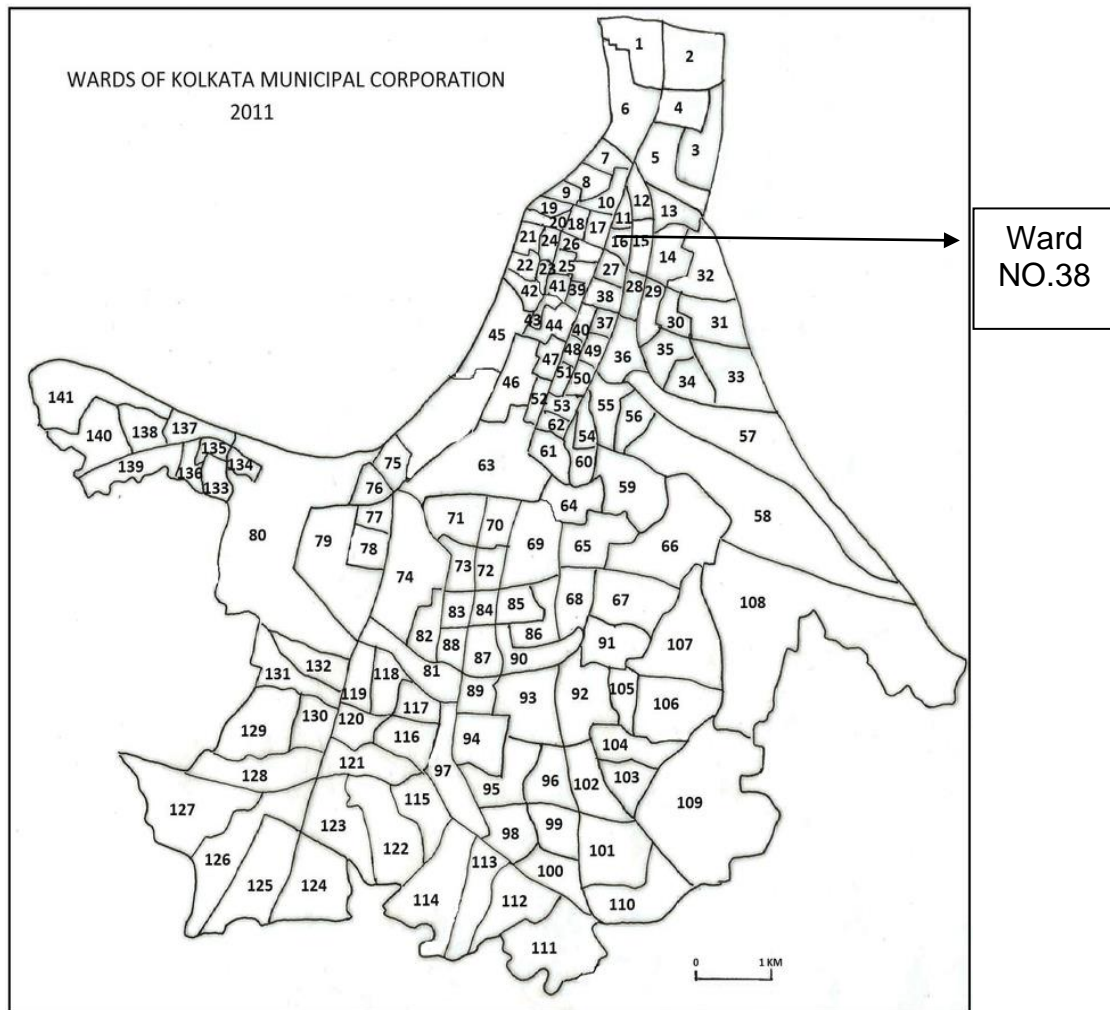
**Table 1: Sample Size**

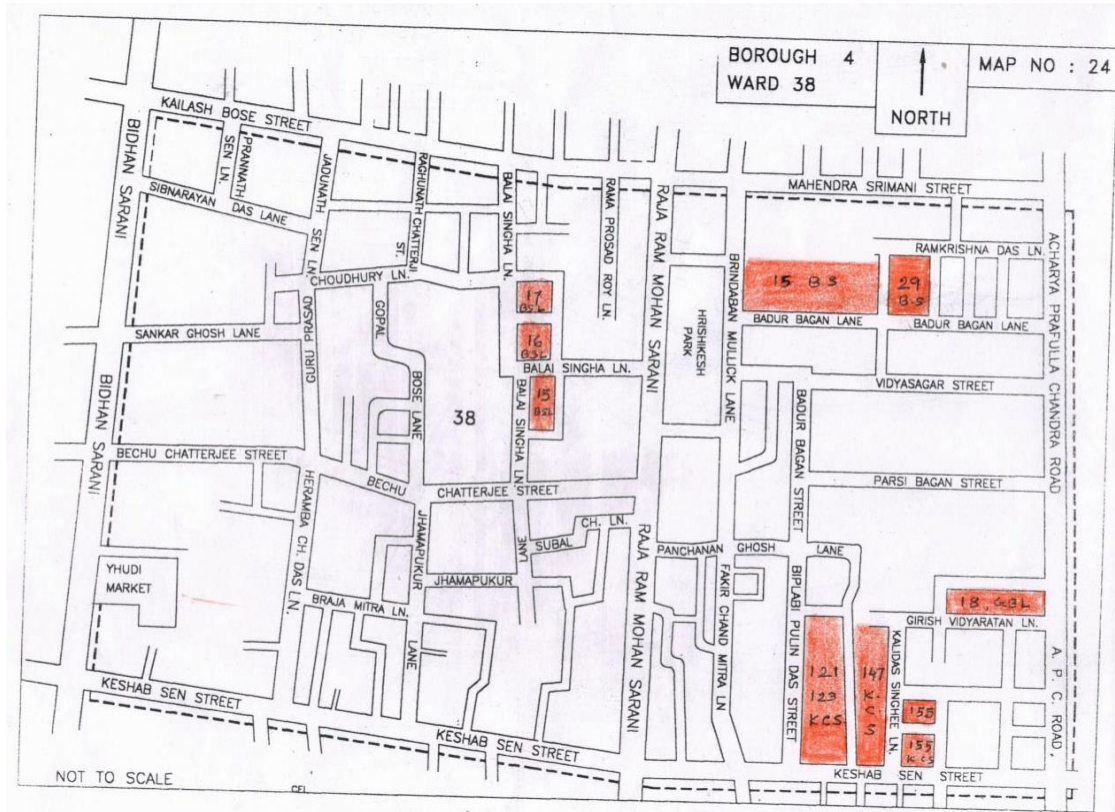
Serial No.	Name of the Surveyed Slums (Ward No.38)	Total Number of Households	Number of Surveyed Households	% of Households Surveyed
1.	15,Badurbagan street	41	8	19.5
2.	29,Badurbagan street	7	2	28.5
3.	121,123 Keshab Chandra Sen Street	110	21	19.1
4.	147,Keshab Chandra Sen Street	142	28	19.7
5.	155,Keshab Chandra Sen Street	88	20	22.7
6.	15,16,17 Balai Singha Lane	21	6	28.6
7.	18,Girish Vidya Ratan Lane	94	20	21.2
<b>Total</b>		<b>503</b>	<b>105</b>	<b>20.87</b>

Source: KMC, 2013

The study followed a quantitative approach, with the help of structured survey schedule. The fieldwork was conducted on January, 2020.

**Location Map**





**Location of the Surveyed Slums**

Source: KMC

**Sample Character (Demographic and Socio-Economic)**

**Table 2: Socio-Economic Factors**

Variable	Description	Frequency
Household size	≤3	11
	4 to 6	77
	7-10	17
Education of the household head	No Formal Education	38
	Primary Education	31
	Madhyamik/ Higher Secondary	20
	Higher Education	16
Monthly average income	0-5000	23
	5000-10000	59
	10000-15000	20
	15000-20000	2
	20000-25000	1
Monthly average expenditure on food	≤4000	47
	4000-8000	51
	8000-12000	7
Working members	Only one	75
	More than one	30
Availing PDS /financial aid from Government	yes	67
	no	38

Source: Field Survey, 2020

**Table 3: Monthly Income statistics**

Lowest earning or income	Rs. 3000
Highest earning	Rs. 22000
Average	Rs.7690.47
Standard Deviation in Income Distribution	Rs.15544.56
Coefficient of variation	202.1275
Median Income	Rs.7500
Skewness of Income Distribution	0.0186

Source: Primary Data, 2020

The median monthly family income is Rs. 7500, while the average monthly family income is Rs. 7690.47. The standard deviation in income distribution is 15544.56, which indicates that data are more spread out in relation to the mean. The skewness of the income distribution is 0.0186, indicating concentration of observation at lower end.

**Table 4: Expenditure on Food per Mensum**

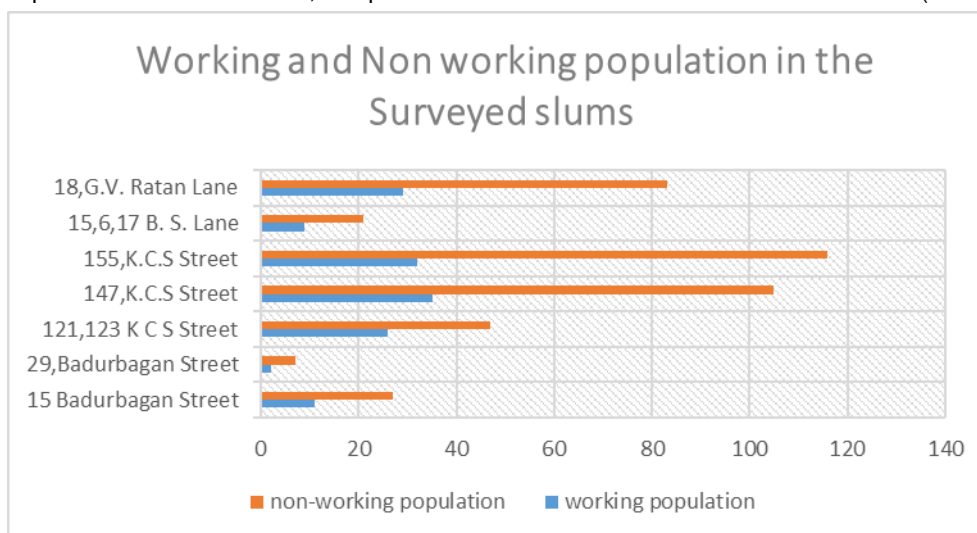
Lowest expenses on food	Rs.2000
Highest expenses on food	Rs.8000
average expenditure on food	Rs.4476.19
SD	Rs.14168.76
Median value of expenditure on food	Rs.4431.37
Correlation coefficient amidst income and expenditure on food	0.86306
Skewness in distribution	0.01008

Source: Primary Data, 2020

Based on the data acquired from 105 households, it is found that average expenditure on food is Rs. 4476.19 and the median expenditure on food is Rs.4431.37. A strong positive correlation exists between income and expenditure on food.

**Family Size, Occupation and Dependency Ratio**

The average family has 5.2 members. 4-6 people make up the family in 73% of the households. 10.47% households have three or less members in their family and 16.19% have 7 or more family members. The mean number of wage earners in the sample (households) is 1.37. One earner makes up over 71% of households, compared to 28.5% of homes with two or more earners. (Table.2)



Source: Primary Data, 2020

In 15, Badurbagan Street (Popularly known as Chamarpatti) 72% of the working population are self-employed, engaged mainly in sole making activities at home. Other 27% are casual labour in different publishers shop, garment shops.

In 29, Badurbagan Street 100% households have their own business like book-binding, box-making etc and they are economically stable.

In 121,123 Keshab Chandra Sen Street 42%of the working population are self-employed, dominantly cobbler.38.46% earn their livelihood as sweeper, hotel worker, garage worker, stationary shop worker. Almost 19%are employed as permanent labour in different private organisations. Rest are involved in 100 days work.

In 147, Keshab Chandra Sen Street 11.42% of the working population is involved in different private organisations. 34.28%are engaged in different personal business like medicine box making shop, slipper making, and silk screen printing, preparing hard cover of diary, and making school boxes. Casual labourers mainly earn from watch repairing shops, cargo van driving activities.

In 155, Keshab Chandra Sen Street 50% of the working population have their own small business and 40% work as casual or contractual labour.

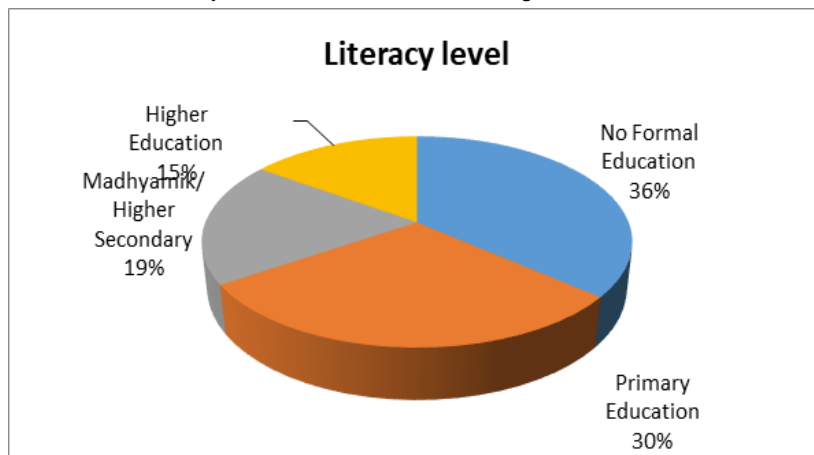
33.33% working population in Balai Singha Lane have their own business like-iron chain making shop, leather sheet cutting business.

In Girish Vidya Ratan lane almost 45% earn their livelihood as casual labour.

### Education of the Household Head

Knowledge of eating habits, food nutrition, and household sanitation is greatly influenced by education. As a result, the level of education of the household head has a big impact on the family's access to food, cleanliness, and health. Besides that the household heads with high education level have greater chance of being employed.

In this study 36% of the household heads are found illiterate, around 30% have completed their primary education, 19% are either Madhyamik or Higher-Secondary pass out and only 15% are continuing their study after Higher Secondary. Here, households with lower educational levels are more likely to experience food insecurity than those with at least a high school education.



Source: Primary Data, 2020

### Survey Tool

In addition to the nine Household Food Insecurity Access Scale Generic Questions (HFIAS), data on the demographic and occupational composition of the households, the education level of the household head, access to social security programmes, income and expenditure on food, housing typology, and access to basic services like water and sanitation have also been collected using a predesigned questionnaire.

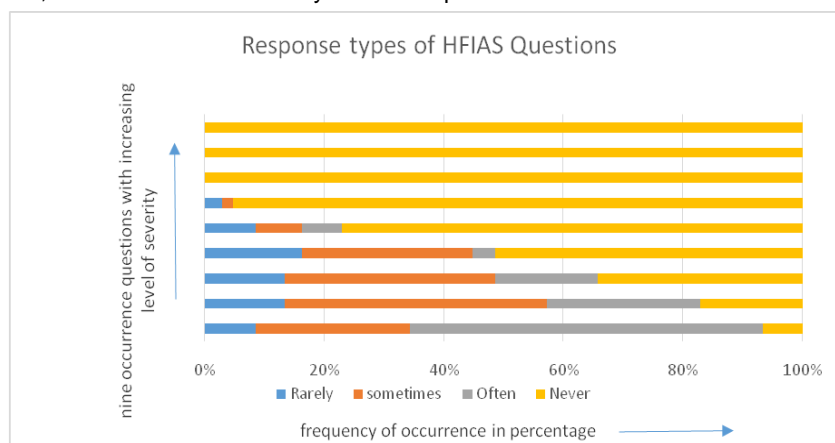
### Methods

The HFIAS is an experience-based measure of household food security. It makes it easier to evaluate the access aspect of household food security. It records household behaviors that point to a lack of both quality and quantity of food as well as supply unpredictability. Based on self-reported activities and experiences, it directly assess the severity of household food insecurity. In this system, a person's responses to questions about food insecurity are summed up into a score between 0 and 27 (for

the previous four weeks), which categorizes respondents as either very or moderately food insecure. A high score indicates a home that is significantly more food insecure than average, whereas a low value indicates a household that is significantly less food insecure. (Coates et.al, 2007).

$$\text{Average HFIAS Score} = \frac{\text{sum of HFIAS scores in the sample}}{\text{number of households in the sample}}$$

Four different types of indicators are produced by the HFIAS module so that the surveyed population's characteristics and trends in household food insecurity (access) may be understood. These indicators offer concise information on food insecurity in the home and access-related conditions, access-related domains, household food insecurity score and prevalence of household food insecurity. (Table: 5)



Source: Primary Data, 2020

**Analysis and Discussion**

**Table 5: Responses to HFIAS Questions**

Question type (Recall Period: Last 4 weeks)	Frequency of response				Total response against each type of question
	Rarely	Sometimes	Often	Never	
Q1: Worry about food	9(8.57%)	27(25.71%)	62(59.04%)	7(6.66%)	<b>98 (93.33%)</b>
Q2: Incapable to eat desired foods	14 (13.33%)	46(43.80%)	27(25.71%)	18(17.14%)	<b>87 (82.85%)</b>
Q3: Eating limited varieties of food	14(13.33%)	37(35.23%)	18(17.14%)	36(34.28%)	<b>69 (65.71%)</b>
Q4: consume foods genuinely do not want to have	17(16.19%)	30(28.57%)	04(3.80%)	54(51.42%)	<b>51 (48.57%)</b>
Q5: Downsize your food.	09(8.57%)	08(7.61%)	07(6.66%)	81(77.14%)	<b>24 (22.85%)</b>
Q6: Consume fewer meals.	03(2.85%)	02(1.90%)	0(0%)	100(95.23%)	<b>05 (4.76%)</b>
Q7: No food of any kind in the household to eat	0	0	0	100%	<b>0%</b>
Q8: Go to bed hungry at night	0	0	0	100%	<b>0%</b>
Q9: Go without food for the entire day and night.	0	0	0	100%	<b>0%</b>

Source: Primary Data



**Access-Related Conditions**

These indicators convey exact and separate information about household's behaviour and perceptions. It helps to comprehend the proportion of households who answered positively to each question, regardless of their regularity of occurrence (FANTA, USAID 2007, P-17). It shows (Table 2) that 93.33% households conveyed their worry and uncertainty about household food access. 82.85% households informed their incapability to eat desired food due to shortage of resources. 65.71%

households told that they ate only some limited variety of food and 48.57% ate such type of foods that they really did not want to have. 22.8% households had to eat a smaller meal and 4.7% households intimated that, they had to curtail their number of meals due to dearth of resources to get food. But none of the households were affected by the three most serious conditions.

### Access-Related Domains

Here all the questions related with HFIAS module are grouped into three broad categories, termed as domains. These three domains are: Anxiety and Uncertainty regarding food access (Question No. 1), Insufficient Quality and restricted choice on foodstuff (Question Nos. 2 to 4), and Inadequate Food Consumption and its effect on the body (Question Nos. 5 to 9). These variables offer a summary of the frequency with which families undergoing or facing one or more behaviours across the three domains.

### Access Scale Score

Each frequency-of-occurrence query's codes are added together to create this variable, which is generated for each household. The scale value is in the range of 0 to 27. Higher score means more food insecurity (access) and lower score indicates less food insecurity. By examining the data it has been calculated that the Average HFIAS score of the surveyed slum population is 6.85. Seven households responded "no" to all occurrence questions and subsequently coded as 0. Nine households just experienced worry, but rarely, and scored 1 individually. Thirty four households got HFIAS score ranging between 2-6 (average 4.08). Forty eight numbers of houses got a score between 7-16 with an average score of 9.8 and seven numbers of households got an average of 14.5.

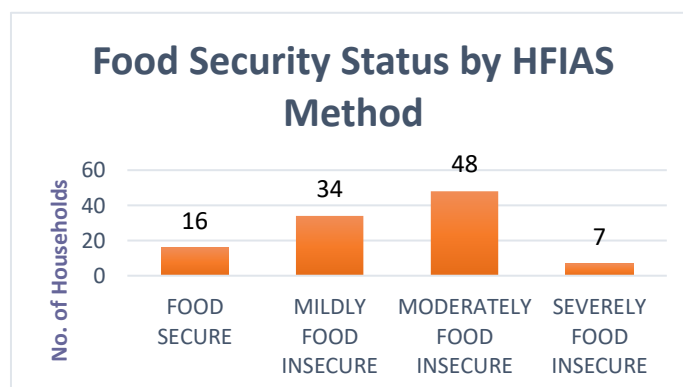
### Access Prevalence

With the help of this indicator houses are categorized into two groups: food secure and food insecure. Food insecure houses are further classified into mildly, moderately and severely insecure groups based on positive answers to more severe situations (Coates et.al, 2007, p-18). It has been found that 15.23 per cent of the sample households are food secure, 32.38% (34 households) are mildly food insecure, 45.71% (48 households) are moderately food insecure and 6.66% (07 households) are severely food insecure. Table 6 illustrates this categorization.

**Table 6: Slum wise Status of Food Security**

Name of the Surveyed Slums	Food Security Status			
	Food Secure	Mildly food Insecure	Moderately Food Insecure	Severely Food Insecure
15,Badurbagan Street	2(25%)	3 (37.5%)	3 (37.5%)	-
29,Badurbagan Street	2 (100%)	-	-	-
121,123 Keshab Chandra Sen Street	-	8 (38.09%)	09(42.85%)	4 (19.04%)
147, Keshab Chandra Sen Street	3 (10.71%)	8 (28.57%)	15 (53.57%)	2(7.14%)
155, Keshab Chandra Sen Street	7(35%)	6 (30%)	7 (35%)	-
15,16,17 Balai Singha Lane	-	2(33.33%)	4(66.66%)	-
18,Girish Vidya Ratan Lane	2(10%)	7(35%)	10(50%)	1(5%)
<b>TOTAL</b>	<b>16 (15.23%)</b>	<b>34(32.38%)</b>	<b>48(45.71%)</b>	<b>7(6.66%)</b>

Source: Prepared by the authors



Source: Primary Data, 2020



## Conclusion

The study shows that (Table 6) as a whole, 84.76% households are food-insecure (mildly 32.38%, moderately 45.71% and severely 6.66%). Thus the food insecurity level stated in the present study is very high. Large average family-size of 5.2, low family income and mostly a single earning member in the household are the main reasons behind it.

About two-thirds (63.80%) of the respondents have ration card. But the amount and quality of goods provided not always suffice their need. The majority of households who use Public Distribution System do not receive enough food for their families. The current state of affairs shows that income-generating activities, social security procedures, and nutritional programmes have not been able to guarantee food security at the home level in the slum and requires a significant effort from the state government and all community partners.

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