

Occupational Seasonality and Food Insecurities Among Women in Slums of Delhi: An Empirical Analysis

Shaina

Independent Researcher, St. Xavier's High School, Sector-49, Gurugram

ABSTRACT: The occupational seasonality and segregation of women are particularly acute in the slums of Delhi. Women play the twin role of homemaker and caregiver; therefore, it makes it more difficult for them to get employed outside their hometowns, as they will not be able to fulfill all their tasks in such a situation. They suffer from the fluctuation of job opportunities with the changing seasons and low-paid and unstable jobs. Such irregularity of income greatly affects their nutritional status and well-being. Inadequate healthcare, inadequate education, and restricted income are all influenced by gender inequality. This empirical study analyses how nutrition, occupational seasonality, and labour segregation, issues affect the nutritional and standard of living of women in the slums of Delhi.

KEYWORDS: SDG, food security, nutrition, occupational seasonality, segregation, slums, Delhi.

1. INTRODUCTION

Due to rapid urbanization, which the UN projects will increase in Asia and Africa, confiscated settlements are being created, leading to the formation of slums. An estimated one billion people currently reside in slums. A heavy urban population has posed a challenge for increasing the government in meeting basic food and health needs, leading to food insecurity. Unlike more developed countries, less economically developed nations are also experiencing more rapid urbanization, with most slums located within and near cities. Many of these nations lack the necessary infrastructure, such as roads and affordable housing, along with essential services like water and sanitation, required to properly accommodate the ever-increasing population migrating to cities. This rapid rate of urbanization raises serious concerns.

Food insecurity can be caused by social, economic, and environmental factors that vary by region. Adding to this hardship is occupational seasonality, which occurs due to fluctuations in employment and income levels at different times of the year. It is typically associated with sectors like agriculture, tourism, and construction. These income fluctuations can significantly impact individuals' ability to afford nutritious food. During off-seasons, when employment or income is unavailable, individuals dependent on these sectors may face food insecurity. For example, construction workers without contracts might lack sufficient funds to purchase nutritious food.

Food insecurity significantly impacts the health and nutrition of women. When food is scarce, women often sacrifice their own intake to ensure that all other family members eat enough. This can lead to deficiencies in iron, calcium, and protein. For pregnant and breastfeeding women, inadequate nutrition poses even greater risks, as it can lead to complications during pregnancy, such as impaired infant development. Furthermore, it weakens their immune systems, increasing susceptibility to even minor illnesses, which can develop into chronic diseases.

Food insecurity can also adversely affect women's mental health. The pressure to provide for their families can lead to depression and anxiety, further impacting their physical health and hindering economic and educational opportunities. Seasonal employment among women exacerbates these challenges. Many women work in sectors that do not provide permanent employment or rely on seasonal work, such as agriculture or tourism. For instance, women in agriculture may find work during the sowing and harvesting seasons but may be unemployed during off-seasons. This unemployment, or the need to shift occupations, complicates their ability to ensure financial security, impacting not only themselves but their entire families. Many women also experience income gaps that affect their access to food, healthcare, and education for themselves and their

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children. In rural areas, women are limited to local seasonal jobs, lacking access to transportation that could offer better employment opportunities.

Women face fewer employment opportunities, also due to the aforementioned social reasons. To address these challenges, policy measures are needed to ensure initiatives like expanding full employment opportunities in rural areas, awareness programs, financial aid, healthcare access, and supplies of nutritious food. Such measures can empower women to secure food and financial stability for themselves and their families.

Even though women prepare 90% of the meals in households worldwide, women and girls are often the first to reduce their intake during tough times. Women may not consume enough food at home simply due to earning less and being less equipped to handle unexpected emergencies.

2. RESEARCH OBJECTIVES

- 2.1. To study the impact of food security, occupational seasonality and segmentation in the slums of Delhi.
- 2.2. To examine the condition of people living in Delhi slums amid the occupational seasonality and segmentation.
- 2.3. To analyse the role of food security, occupational seasonality, and segmentation in migration of the people living in the slums of Delhi.

3. RESEARCH QUESTIONS

- 3.1. How do food security, occupational seasonality, and segmentation affect the people living in the slums of Delhi?
- 3.2. What is the condition of the people living in Delhi slums amid the occupational seasonality and segmentation?
- 3.3. What role do food security, occupational seasonality, and segmentation play in migration in the context of slums in Delhi?

4. RESEARCH METHODOLOGY

It is important to highlight that the list of 'jhuggi-jhopdi' colonies provided by the DDA is neither complete nor all-encompassing. Numerous unauthorized squatter settlements and marginal communities situated throughout the city are not necessarily included in this list, which primarily features recognized slums. The list of notified slums was also acquired from the slum wing, and these slums were identified in collaboration with experts. Below is a brief overview of the sampling procedure employed to select the 400 households. To select these 400 sample slum households, we utilized a two-stage stratified random sampling approach. The foundational document for our sampling strategy, as previously mentioned, is the list of 'jhuggi-jhopdi' clusters provided by the DDA for the year 1994. This document is the most recent available and details the number of constituencies, the number of clusters within each constituency, and the number of slums in each cluster. In the initial phase, we categorized Delhi into nine zones based on the geographical distribution of the 70 constituencies outlined in the DDA list; thus, zones one through seven correspond to north, north-east, east, south, west, and central Delhi, respectively.

State selection

The investigator opted for Delhi as the study site, leveraging its National Capital Region status and the investigator's familiarity with the area to facilitate a thorough examination.

District selection

In the preliminary stage, Delhi was segmented into seven distinct zones based on the geographical positioning of the 70 constituencies identified in the DDA list; these zones include north, north-east, east, south, west, north-west, and central Delhi. Four of these zones were selected exclusively based on the slum population, according to the MCD report.

Cluster selection

To ensure a more representative sample, 400 households were selected from four non-notified and three notified slums distributed throughout Delhi.

Literature Review

Singh has examined in his study with an occupational choice-based adaptation technique that household members, particularly women in urban impoverished settings, ensure their food access. Working women and men in seven primarily slum districts in the North, South, East, and West Delhi are the subject of this study. It also examines how women in low-income urban homes use self-mechanism to make sure their families have access to food by working in some kind of business. Singh et al. (2017). On the other hand seasonal job

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opportunities are usually associated with agriculture, tourism, or construction sectors, which will have jobs only for portions of the year. Governments should have policies that address educational programs and seasonal jobs, which would create food security exit routes. This could include initiatives that provide training, financial literacy education, and access to continuous employment opportunities. (Besharov et al. 2017). Another study from the standpoint of policymakers discussed a significant obstacle in terms of food security, particularly in developing nations like India. According to a survey done six years ago in the Vellore district's urban slum areas, up to 75% of people were facing food insecurity. Although the condition of household food security in Vellore's urban slums remains unstable, however, significant progress has been made recently (Dharmaraju et al., 2018, p. 822). A similar study of economic security, employment status, and wages in particular, reflects on state-of-the-economy factors related to unemployment rates and the state of the overall economy: periods of slowdown. They highlight the direct correlation between job stability and access to sufficient, nutritious food. This implies that prolonged food insecurity can result in adverse health effects, which can eventually reduce productivity and well-being among seasonal workers (Gundersen et al., 2018). Turning to another aspect, a study mentioned there is little evidence to support that women's work is involved in several of the major pathways that connect nutrition and agriculture. It also emphasizes that the emerging evidence highlights the complex ways that women's agricultural work, setting, seasonality, and social identity influence food consumption and feeding habits. (Nitya and Raju, 2020). An additional factor to consider is that undernutrition is mostly caused by seasonal changes in agriculture. The study examines whether seasonal variations in household dietary diversity and food security are lessened by access to local food markets using data from Sierra Leone. The findings have supported the notion that seasonality in agriculture causes notable variations in household food security and dietary variety Bonuedi et. al., 2021). In the context of this seasonal employment can create significant economic uncertainty. Such fluctuations can cause a cycle of poverty and hunger because a family cannot sustain itself on only what was made during the peak harvest season. Regions dependent on seasonal labour in agriculture face different challenges. This leaves their communities vulnerable to food insecurity issues. Alternating livelihood programs or trainings around off-seasons can benefit the community and stabilize food access, researchers have to get more accurate information on food insecurity. McKay et al. (2023). Expanding on this, one must consider the study which demonstrates that food security in urban slums is influenced by income, livelihood sources, household size, and perceived insecurity. Vulnerability is heightened during crises, exemplified by the 2007/2008 post-election violence in Kenya, which saw food prices soar and purchasing power decline. Negative coping strategies, such as meal reduction and reliance on low-quality street food, are common. (Murage, 2014). Another study focused on food insecurity among the urban slum dwellers in Dhaka, Bangladesh, by emphasizing the vulnerability of this group. The empirical evidence in the study underscores the importance of a sustainable urban slum upgradation plan to ensure better access to essential services such as education, employment, housing, WASH services, and overall security. (Bhattacharjee and Sassi, 2021). Several studies support this perspective, including the study by Payne on food security as a persistent issue in India, particularly affecting women and children in rural Rajasthan. This paper surveyed pregnant women and women with young children in self-help groups. The key factors contributing to food insecurity included poverty, low dietary diversity, tribal affiliation, and lack of savings for food expenses. The study suggests that improving food security could involve promoting saving for food, enhancing women's decision-making power, and strengthening connections with child development organizations. Payne et. al. (2016). Building upon previous research, Saxena explored the determinants of household food security and its impact on the nutritional status of women in the slums of Ghaziabad. It focuses on the roles of income, livelihood, and expenditure. The findings revealed that 20.1% of households were highly food insecure (with hunger), 37.7% were low food insecure (without hunger), and 42.1% were food secure. Obesity was more common than being underweight among food-insecure households. Additionally, as total monthly per capita expenditure increased, the percentage of expenditure on food decreased. Saxena et. al. (2018). According to a more recent investigation by Hathi, the 2011 India Human Development Survey revealed that in about a quarter of Indian households, women eat after men. This study examines whether this gender discrimination is linked to poorer mental health outcomes for women. Mental health was assessed using the World Health Organization's Self-Reporting Questionnaire. The findings indicate that women who eat last have worse mental health, even after considering socio-economic differences. The two possible reasons for this are: eating last may be tied to worse physical health or to reduced autonomy, or both. Hathi et. al (2021). In a similar vein, Mahabir examined Over 1 billion people live in slums, with numbers expected to rise, especially in less economically developed countries experiencing rapid urbanization. These countries often struggle to provide adequate infrastructure

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and basic services for the growing urban population. Existing research on slums has focused on socio-economic and policy issues, physical constructs to better understand slums and develop effective solutions at local, national, and regional levels (Mahabir et. al, 2016). In addition to the earlier findings, Vermeir expands on the challenge of encouraging environmentally sustainable food consumption (ESFC) is pressing due to the difficulty of changing ingrained eating habits and food preferences. Despite positive attitudes towards sustainable food, a gap remains between these attitudes and actual consumption. This study presents a comprehensive theoretical framework for future ESFC research and highlights behavioral solutions for environmental challenges in the food domain. Vermeir et. al (2020). This is supported by another study, in which Sileshi highlighted how the previous studies on food insecurity in developing countries, including Ethiopia, have often lacked ex-ante analysis. This study addressed the need to understand household vulnerability to food insecurity to better inform policy and strategies for enhancing food security among smallholder farmers. The results showcased that 54% of households were vulnerable to food insecurity, with groups categorized as chronic food insecure (24.27%), transient food insecure (11.77%), highly vulnerable food secure (18.38%) and low vulnerable food insecure households but also those likely to become food insecure shortly. Sileshi et. al (2019) In a subsequent study, McKay found that despite significant growth in India over the past two decades, food insecurity remains a critical public health issue. India has the largest number of people experiencing hunger and food insecurity. This study investigates the experience of food insecurity among women in a village in Punjab, aiming to understand their role in food production, household food security, gender roles, decision-making processes, and nutritional status. The findings will inform policies to improve food security and reduce vulnerability among women in rural parts of India (McKay et. al, 2020). Thus, these studies provide a strong foundation, leading to the next consideration of Militao, who explored food insecurity and health outcomes other than malnutrition in Southern Africa through a descriptive systematic review. Food insecurity is an important public health problem in southern Africa. It is associated with a variety of factors like poverty, inflation, dependency ratio, gender inequality and seasonality of occupation, along with food insecurity. Those affected by these factors face serious consequences on their mental and physical well-being. In adults, food insecurity has been associated with poor mental health, depression, and other health problems. Militao et al. (2022) In greater detail, Mezgebe explores how she has researched on Seasonal variations in household food security and consumption affecting women's nutritional status in rural South Ethiopia. The study conveys that food availability varies according to the seasons in most rural areas. Women are the most vulnerable group in areas affected by drought and climate change in terms of food availability. It showed an improvement in women's BMI during the season of better food access. This indicates their high vulnerability to seasonal food availability. The findings of this paper suggest the need to examine seasonality of food shortages within the broader climatic context. Mezgebe et al. (2024). Following this idea, Saville conducted a Comprehensive analysis of the association of seasonal variability with maternal and neonatal nutrition in lowland Nepal. The study found that birth varies seasonally which is attributed to food insecurity, food intake, eating habits, work pressure, and disease exposure. In the post-rice harvest season, there is an increase in mother's energy and nutrition, and the infant gains more weight due to lower workload, lack of food stress, and increased consumption of dairy products and vitamins. In Nepal, the inequitable allocation of food reduces the adequacy of pregnant women. Saville et al. (2021) By delving deeper into this topic, a study was conducted on Rural food security, subsistence agriculture, and seasonality. The study focuses on the fact that most of the food insecurity and undernourishment is prevalent in smallholder farms in developing countries like Africa. African farmers consume a large amount of their product. Subsistence agriculture contributes to their diets, and it is vulnerable to seasonality. During the lean seasons, the calories consumed are less than half of the purchased foods. Purchased foods have a role in the diversity of diets much more than subsistence production. The findings suggest the need to strengthen rural markets to improve food security and the quality of diets in the African small farm sector. Sibhatu and Qaim (2017). Similar conclusions were drawn by some authors in the Hapur district, demonstrating that women engage in agricultural activities with the hope of earning money for unemployed days due to the seasonality of occupation among them. The paper also states that seasonality of occupation is most likely among specific caste categories of women like scheduled caste and other backward classes. This showcases a link between poverty, seasonality and caste hierarchy (Swagat, Basu and Gloria Kuzur 2020). Another study conducted in South Africa explores seasonal farm working women's food insecurity. It conveys that seasonal farm work prevents women from acquiring a healthy diverse diet. It happens during some months of the year when they are unemployed or underemployed due to a lack of opportunities. Calvert and Samantha (2021). Extending this line of inquiry, Pandey and Fusaro investigated that 56% of women, and among

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them 76% of Dalit women, experienced food insecurity. Even after allocating education and economic support, Dalit women are more vulnerable than any other group of women. Economic wealth is inversely correlated with food security. Women with higher education, 10th grade were found to be more food secure in comparison to other women. Pandey and Fusaro (2020). The current review builds on previous findings by the authors in Malaysia, highlighting that food security didn't necessarily varied with seasons. The occupational seasonality affected the consumption of certain specific food, leading to amnesia among the adolescents in Malaysia. Seasonally, some nutrients are essential. Therefore, they should be made available for an enhanced quality of diet for urban poor adolescents. Tay, tung and others (2023). A consistent pattern emerges in the work of the authors on food insecurity in Jordan. Women who are food insecure, along with hunger, are at a greater risk of malnutrition. Women with food insecurity had low intake of all food groups. Only grains were consumed at a higher level by food-insecure women. Obesity and food insecurity had no necessary relationship according to the study (Bawadi, tayyem and others 2012). These results are strongly supported by similar findings from rural west, Sleman, Indonesia examined food insecurity among women. It highlighted that 58% of women were food insecure. The factors influencing food insecurity among women are wastage of home yards, which are useful for growing food crops and have great productivity, less income and less house asset value. Samputra and Antriandatri (2024). A similar approach was taken by Isaac and Edmond, who concluded that draught, irregular rainfall, diseases, and pests led to food insecurity among the dodowa community. It uses various mechanisms like selling forest produce, trading, buying and selling. The paper recommends the promotion of non-farm rural opportunities. This can lead to more food secure homes, specially women who face food insecurity due to seasonal unemployment. Isaac and Edmond (2015). This assertion is further validated by studies conducted by Rajashree and sheikh, which examined that hypertension is becoming very common among women due to limited access to healthcare. The study also assesses food insecurity which is a reason for physical illness of women. The study found that the younger women who were most likely to have a poor diet and higher levels of poverty were more food insecure and faced problems in work, like raising a child. Rajashree and Sheikh (2024). In the same vein, Rao and Raju identified that although there is little evidence to support these connections, women's labor is involved in several of the major pathways that connect nutrition and agriculture. In theory, women's agricultural labor may have both beneficial and detrimental effects on nutrition, either by giving them more control over their wages or by making their workloads more demanding. The growing body of research highlights the complex ways that women's agricultural labor, and thus their food consumption and feeding habits, are mediated by social identity, seasonality, and place. Rao and Raju (2011). Adding to this body of evidence, Rustage demonstrated that at occupational trends in light of India's growing female workforce to determine whether gender stereotypes still exist or whether there are any discernible signals of change, no matter how slight. according to the unit to illustrate the slow development that is evident, the research analyses level NSS data, the actual magnitudes, and incremental changes in the occupational categories in which women are engaged. These changes are particularly noticeable when considering younger, better-educated metropolitan women. Rustage et. al (2010). Price and Wasserman extend the conclusions of previous research by also identifying the first comprehensive explanation of summertime drops in women's employment. Mothers account for the majority of the summer decline in female employment, which coincides with variations in the time of school closures among states, with early school-age children, and corresponds with more time spent in daycare. Price and Wasserman (2023). Notably, this aligns with findings reported by Islam about the seasonal pattern of employment among women. Since domestic work is the principal occupation of the vast majority of women, seasonal unemployment among them may not result in the loss of production that can be directly observed. The position of women's labor in the current time allocation scenario is the other facet of its seasonality. Rushidan Islam Rahman et. al (1986). Such parallels can also be seen in studies conducted by Farnworth and others in Malawi indicating a significant change toward task and benefit sharing among HH members. The social status of women in the community rises. Having substantial assets is not a prerequisite for making a meaningful decision. When women's agency is properly mobilized, assets can be mobilized as well. Farnworth and others (2011). Later research by Maitra conducted in 2010–11, 500 slum homes in Kolkata were randomly surveyed. A scale of experience food security is developed. About 15% of households in urban slums experience food insecurity. Multi-sectoral approaches should be used to address urban food insecurity. The experiential scale may prove to be a reliable indicator of India's food security. Maitra et. al (2017). These findings reinforce earlier research that points to the fact that women play an important role in production, labor, and domestic services in managing seasonal stress, crisis, and calamity. It provides an examination of disaster and adversity

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that identifies the resilience of networks of homes led by women and poses fresh queries about risk aversion, probability estimation, and the value of female labor. Jiggins et. al (1986).

5. RESULTS AND DISCUSSION

Table 1. Assessment of employment status among surveyed households, classified by location and gender for persons above the age of 15

Work categories	Slum A		Slum B		Slum C		Slum D		Slum E		Slum F		Slum G		Total	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
No work	18 21.2	67 78.8	23 32.9	47 67.1	31 30.7	70 69.3	14 20.3	55 79.7	26 31.7	56 68.3	23 26.1	65 73.9	38 27.3	101 72.7	173 27.3	461 72.7
CL	32 80	8 20	31 77.5	9 22.5	42 87.5	6 12.5	51 87.9	7 12.1	45 83.3	9 16.7	50 90.9	5 9.1	90 73.8	32 26.2	341 81.8	76 18.2
RW	20 83.3	4 16.7	11 78.6	3 21.4	5 100	0 0	5 100	0 0	2 100	0 0	2 100	0 0	5 100	0 0	50 87.7	7 12.3
SE	5 100.	0 .0	6 75	2 25	2 66	1 33.3	0 .0	0 .0	2 66.7	1 33.3	1 100.	0 .0	5 100.	0 .0	21 84.0	4 16.0
Total	75 48.7	79 51.3	71 53.8	61 46.2	80 51.0	77 49.0	70 53.0	62 47.0	75 53.2	66 46.8	76 52.1	70 47.9	138 50.9	133 49.1	585 51.6	548 48.4

Note: According to the ILO's definition of informal employment, it includes self-employed workers and employers running their own informal sector businesses, family contributors, and employees in informal roles, whether they are associated with formal or informal enterprises, as well as paid domestic staff.

b. Note: This table displays the percentages in a row-wise format.

c. Note: CL- Casual labour, RW- Regular Wage, SE- Self-Employed.

Table 1 summarizes the employment status of women in seven clusters across Delhi, focusing on individuals aged over fifteen. The data shows that a high percentage, 72.7%, of women are unemployed, while 27.3% of men are also not working. Women are significantly affected by unemployment across all major work categories. In the self-employment category, only 16% have taken the initiative to start their own businesses, primarily due to a lack of skills and financial resources among many women in slum areas. There are numerous reasons for women's unemployment beyond cultural and social factors. Seasonality is a critical factor that affects women's work availability, as work is not consistently available throughout the year, leading to variations in household income and directly impacting their food security status. Women typically use most of their liquid cash for essential daily purchases, such as milk and cooking oils; thus, significant income fluctuations can directly affect their food security. The lack of job opportunities increases women's vulnerability, making households more prone to food insecurity and other basic necessities.

Table2. Occupational category

Occupations	Male	Female	Average Income Rs (Male)	Average Income Rs (Female)	t-test
Professional	26(6.20)	8(8.6)	5050	3229	1.835**
Sales	98(23.3)	12(13.0)	5035	4375	1.492**
Trade	8(1.90)	0	4833	0	0
Personal services	46(10.97)	44(47.8)	3400	2046	6.521*

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Manufacturing	40(9.5)	11(11.9)	4345	2250	4.60*
Commercial services	20(4.7)	2(2.17)	4500	0	0
Transport	60(14.3)	1(1.08)	4604	0	0
Tailoring and knitting	12(2.8)	2(2.17)	5222	2250	3.014*
Construction	91(21.7)	12 (11.9)	5712	4750	2.88*
Security	3(0.7)	0	3000	0	0
Repairing	15(3.5)	1(1.08)	4909	0	0
Total	419	92			

Note: The figure enclosed in parentheses represents the percentage of the corresponding total. The T-test serves as the statistical measure to assess the significance of the differences in wage disparities between males and females. A value of '0' indicates the absence of female employment, while 'Not significant' denotes a lack of statistical significance, and '*' signifies significance at the .05 level.

Table 2 illustrates the gender disparity in occupational roles. A significant number of women are not engaged in the labor market due to insufficient skills, training, and education, compounded by household responsibilities that hinder their employment opportunities. Nevertheless, some women enter the workforce out of economic necessity to help support their families, which also ensures food security for their households. Notably, while women may not work full-time, their average working hours are comparable to those of their male counterparts. A critical point to address is the near absence of women in sectors such as trade, commercial services, transportation, security, and machinery repair. Over the years, the participation of women in various occupations has markedly declined, primarily because many of these roles demand full-time commitment and travel, which women often cannot manage due to domestic obligations.

There exists a significant gender income gap, as the statistics reveal the average earnings of both men and women across various employment sectors, indicating that men's incomes are notably higher than those of women. The construction industry records the highest average earnings for both genders, while the lowest averages are seen in the security sector for men and the personal services for women. Remarkably, the average income for construction workers of both sexes is substantially higher than that of other job categories. This can be explained by the fact that construction includes skilled laborers such as plumbers, carpenters, and masons, who often work overtime, leading to higher daily earnings compared to unskilled laborers. Additionally, the rise in construction projects in Delhi allows these workers to find consistent employment throughout much of the year.

Table 3. Below poverty line card holding

Type of card	Non Notified	Notified	Total
No Card	177 (88.5)	150 (75)	327 (81.8)
Red Card	19 (9.5)	5 (2.5)	24 (6)
Yellow card	4 (2)	34 (17)	38 (9.5)
White Card	0	11(5.5)	11(2.8)
Total	200	200	400

Table 4. Amenities provided under different types of BPL cards

Type of card	Wheat (Quantity dispersed)	Rice (Quantity dispersed)	Kerosene Oil (Quantity dispersed)	Sugar (Quantity dispersed)
Red	20kg/3	10kg/4	5lit/60	5kg/14
Yellow	No of persons in family@Rs 3	No. of persons in family @Rs/4	No oil	5kg/14
White	No of persons in family@Rs 3	No. of persons in family@ Rs/4	No	No

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The Public Distribution System (PDS) serves as India's food security framework. It was established by the Government of India through the Ministry of Consumer Affairs, Food, and Public Distribution, and is collaboratively managed with state governments to provide subsidized food and non-food items to impoverished populations in India. This initiative was initiated in June 1997. Key commodities distributed include essential food grains such as wheat, rice, sugar, and kerosene, which are made available through a network of fair price shops, commonly referred to as ration shops, located in various states throughout the country.

Tables 3 and 4 illustrate the total number of Below Poverty Line (BPL) cardholders in the surveyed slums, where three categories of BPL cardholders were identified. These categories are represented by red, yellow, and white cards. Red cardholders receive 20 kg of wheat at Rs. 3 per kg, 10 kg of rice at Rs. 4 per kg, and 5 kg of sugar at Rs. 14 per kg. In contrast, the distribution for yellow and white cardholders varies based on family size. Yellow and white cardholders are entitled to wheat and rice at Rs. 3 and Rs. 4 per kg, respectively, adjusted according to the number of family members. White cardholders also receive rations based on family size, with the exception of sugar and kerosene oil. Nonetheless, numerous issues persist within the Public Distribution System (PDS), leading to the black market for these food grains, as reported by the affected individuals.

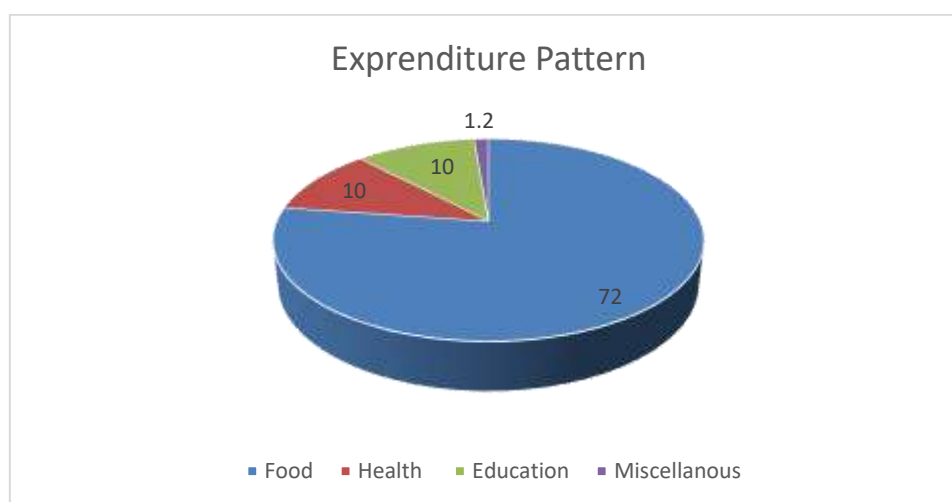


Figure 1. Average expenditure for slum dwellers

In the subsequent section, we will explore the vulnerability of households residing in urban poverty-stricken areas concerning food security. Commonly used indicators of food insecurity encompass food expenditures, consumption levels, household composition, and nutritional health. Nonetheless, these indicators face challenges related to measurement and conceptual clarity. The figure presented above depicts the average expenditure trends in the slums of Delhi, indicating that 72% of income is devoted to food, while health-related spending is under 10%, and educational expenses are even lower at less than 10%. The total income from all sources is so limited that virtually all financial resources are consumed by food needs. The absence of job opportunities for both genders leads to underemployment, which adversely affects both income levels and the food security status of households.

Table 5. Reasons for indebtedness (coping strategies)

Reason for Indebtedness	Did not answer	Yes	No	Total
Not Indebted	83(30)	10(3.6)	184(66.4)	277
Family Exp (Mainly Food)	0(0)	66(100)	0	66
Health Problem	0(0)	29(100)	0	29
For Setting shop	0(0)	2(100)	0	2
Health of Father	0(0)	5(100)	0(0)	5
Childs Operation	0	1(100)	0	1
For making Home at Village	0	4(100)	0	4
Marriage	0	1(100)	0	1
Sister Marriage	0	4(100)	0	4
Husband Operation	0	9(100)	0	9
Total	83(20.9)	131(32.9)	184(46.2)	398(100)

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In response to the seasonal variations in employment throughout the year, individuals living in slums adopt a range of strategies. These include borrowing food, pawning or selling belongings, cutting back on food consumption, or cooking in bulk once a day. The accompanying table indicates that around 32.9% of the 400 households surveyed were indebted for various reasons, whereas 46.2% were not. The survey also found that a significant number of households participated in money exchanges among themselves as a strategy to manage their monthly expenses that were insufficient during that struggle period.

Table 6. Type of skilled labour

Type of work	Male	Male income (Avg Income)	Female	Female (Avg Income)	Total
Skilled	43(10.26)	5712	5(5.4)	4833	48(9.3)
Non-skilled	376(89.73)	4500	87(94.56)	2733	463(90.6)
Total	419		92		511

The role of skills and knowledge is crucial in driving economic growth and social development for any nation. Countries with advanced skill levels are better at addressing the challenges and opportunities within the labor market. The demographic targeted for skill enhancement includes all individuals in the workforce, including those entering the job market for the first time (12.8 million annually), those in the organized sector (26.0 million), and those in the unorganized sector (433 million) as of 2004-05. The current capacity of skill development programs is 3.1 million. India has set a goal to skill 500 million individuals by 2022. In terms of skilled labor, a significant number of both male and female workers possess low basic skills, which has a considerable impact on their wage levels. Many jobs in slum areas require minimal basic skills, such as truck drivers, construction workers, plumbers, and hinge (kabja) workers, which are predominantly held by men. For women, the primary area of employment consists of part-time, contractual activities that do not require even basic skills, often extending household responsibilities. This is a major reason for the wage differentials observed between genders. Both male (10.26 percent) and female (5.4 percent) workers demonstrate low skill levels, with around 89.73 percent engaged in non-skilled activities.

Table 7. Seasonality in work

Month	Activities	Wage /Day	Time/ Day
January and February	Shelling peas, crafting garlands, eliminating excess material from zippers and jeans, and sharpening nuts and bolts..	1 Dirai=5kg7/dirai 2 Per Garlands, 30 paise/piece 50 paise/piece.	5-6 hrs
			4-5 hrs
			6-8 hrs
			6-8 hrs
March and April	Preparation of Papads, removing labels from fabric.	20/kg for making <i>papads</i> , 5/piece, 30 paise/piece	6-8 hrs
			5-6 hrs
			5-7 hrs
July and August	No activity	No activity	—
September October and November	Inserting cushions into a Vaseline container, eliminating excess materials from completed products, utilizing a basket, and crafting chandeliers (Jumars)	Rs2/bottle, 5Paise /piece, 10/basket, Rs10/piece.	6-8 hrs
			5-6 hrs
			7-8 hrs
			5-6 hrs
Notified Slums			
Months	Activities	Wage/day	Time/day
January, February, march	Soap packaging, Purification and cleaning of copper Making of papads	For 1000 soaps they get Rs 30 Rs 300/day Rs 20/kg	5-6 hrs / day
May, June July August	Making of garlands	For one piece they get Rs 1.	4-6 /day

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Seasonal variation, also known as seasonality, refers to the degree of fluctuation in employment levels due to seasonal patterns caused by climatic and institutional events. This variation governs the extent to which employment estimates must be adjusted to account for seasonal influences. To effectively address poverty and food security, it is crucial to consider the seasonal availability of work within low-income households, ensuring that year-round employment can provide benefits to the wider community. Table 7 presents information on various activities that are prevalent in slum areas throughout the year. It is evident from the table that job opportunities for women are significantly lower compared to men, further illustrating the segregated nature of the labor market, where female participation is consistently much lower than that of males. Women account for the majority of unpaid work, and when they are compensated, they often face significant wage differentials compared to their male counterparts. Mitra has observed that the physical segmentation of certain job types for specific groups is primarily due to distance within the city, and even inexpensive intra-city transport does not eliminate these barriers. Under these circumstances, women are particularly vulnerable as they bear the major burden of unpaid work, which restricts their ability to travel long distances.

CONCLUSION

Women and girls are influenced through two main pathways. The first is the constraints on their access to education and job opportunities, which limits their economic autonomy and weakens their bargaining power within the family. This weakened bargaining power results in little or no voice in household decisions, biased feeding and caregiving practices favoring boys and men, food and nutrition insecurity, and poorer health and nutrition outcomes. This paper seeks to conclude that women's income positively contributes to the nutritional status of the household. Women in slums often lack a consistent source of income; however, by engaging in various enterprises, they make significant contributions to their household income, thereby enhancing their food security. This indicates that being employed in some form of enterprise (as a viable option) allows them to adopt other adaptive or coping strategies, such as undertaking multiple jobs, which provides them with a regular source of income. However, this does not enable them to develop their skills in any particular enterprise, thus making them more vulnerable. This further suggests that there are factors influencing their occupational choices (such as taking on multiple jobs) beyond concerns related to food security. The influence of seasonality is a significant factor affecting women's work and income, particularly during certain times of the year when job opportunities are limited. Slum dwellers present two key arguments in this regard: first, the availability of work is dependent on the season, and second, even within the active seasons, work is not consistently available throughout the year, leading to income fluctuations that have a considerable impact on the nutritional status of women, children, and the household overall. Most of the income generated from these activities is allocated towards food expenses. Households with economically dependent adults and larger family sizes are the most vulnerable. Thus, women in these contexts act as catalysts for household nutrition, with approximately 73% of surveyed women indicating that they spend their income on food, followed by their children's education and health. The seasonality calendar indicates that during July, August, and December, there are no activities that can substantiate the income of women, adversely affecting the food security status of the entire household. Improved food intake can lead to better health and nutritional outcomes, but this is contingent upon access to adequate education, healthcare, water, and sanitation. This paper demonstrates how gender-sensitive policies that empower women within households can enhance nutritional security.

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