

Food Insecurity and the Coping Strategies of West African Migrants in Accra, Ghana

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Abstract

This paper examines the food insecurity experiences and coping strategies of West African migrants in Accra, Ghana, across three periods: pre-COVID-19, during the pandemic, and post-COVID-19. Utilizing a survey of 420 migrants, the study explores the interplay between remittances, socioeconomic factors, and food security. The findings reveal that food insecurity was most severe during the pandemic, with remittances—especially food remittances—offering limited mitigation due to underlying vulnerabilities. Coping strategies employed by migrants included reducing meal frequency, relying on less preferred foods, borrowing food, and seeking social support. The study highlights the need for targeted policies to strengthen urban food systems, provide social safety nets, and enhance the resilience of migrant communities during crises. These findings contribute to the literature on migration and food security by offering insights into the vulnerabilities and adaptive behaviors of urban migrants in the face of systemic shocks.

Keywords

food insecurity, West African migrants, COVID-19 pandemic, remittances, coping strategies

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1. Introduction

Ghana is an important destination for migrants from the Economic Community of West African States (ECOWAS) region, with the top four origin countries being Nigeria (28.4%), Togo (22.3%), Burkina Faso (17.3%) and Côte d'Ivoire (4.6%) (Ghana Statistical Service (GSS), 2023). The International Organization for Migration (IOM) (2020) reports that most of these migrants are low-skilled workers with minimal social protection and are more susceptible to extreme vulnerability during a crisis. Their roles and contribution to the development of Ghana, mirror those in other destination countries, spanning economic and cultural space through trade, job opportunities and businesses such as restaurants that maintain their indigenous culture and affect the cultural landscape of their host nations (Glick Schiller et al., 1995; Quartey et al. 2020).

Accra, Ghana's capital, attracts many migrants from other countries in West Africa despite the socioeconomic challenges of the city (further stressed by the COVID-19 pandemic). These challenges include food insecurity issues, described by the Food and Agriculture Organization (FAO) (2016) as comprising four dimensions: food availability, food access, food use, and food stability. Migrant remittances play an important role in the food security of recipient households. While some studies report a positive relationship between remittances and household food security (Moniruzzaman, 2016; Sulemana et al., 2019), others indicate that remittances increase the food insecurity of migrant remitters themselves (Crush & Tawodzera, 2017).

This study explores the connection between remittances and food security, as well as migrant coping strategies through a survey of 420 West African migrants in Accra. By examining the experiences of this migrant population, we aim to highlight the effect of remittances (both cash and food) and other socioeconomic characteristics on food insecurity scores. Thus, we highlight the vulnerabilities faced by West African migrants in Accra and identify possible policy intervention and community support. Our study discovers important initial insights on reverse remittances to migrants, a subject that is limited in migration literature. The situation is compounded by the occurrence of a global pandemic with consequences across all the origin countries of the respondents. Most migrants, regardless of the type of remittance received, are moderate and employed migrants have lower food insecurity scores. Many who have stayed for longer periods in Accra are also less food insecure. In fact, the period of stay of migrants is likely to enhance the promotion of social ties with other migrants and citizens of the destination country and could provide a social safety net during crisis periods. However, we observe a statistically significant reduction in food insecurity given the duration of stay applies only to the pre-pandemic era. As expected, household size is associated with high food insecurity during and after the pandemic.

This paper is organized as follows. Section 2 presents a review of the literature on remittances and food security

both before and after the COVID-19 pandemic. Section 3 describes the data used and provides descriptive statistics of the data and Section 4 describes the measurement of key variables used, the estimation models, and analytical methods. Section 5 presents the results and a discussion of the findings; and Section 6 shares conclusions and some recommendations.

2. Literature Review

Several recent studies have explored the nexus between remittances and food security prior to the COVID-19 pandemic (Crush & Caesar, 2016, 2018; Crush & Tawodzera, 2017; Moniruzzaman, 2016) as well as during and afterwards (Béné et al., 2021; IOM, 2020) while others have examined the relationship between pandemic precarity and food insecurity in Ghana's urban areas (Onyango et al., 2023). In a related study, Crush & Tawodzera (2017) show that most Zimbabwean migrant households in the poorer suburbs of Johannesburg and Cape Town in South Africa experience food insecurity, partly due to the many demands to remit placed on their income.

Béné et al. (2021) evaluate COVID-19 effects in 62 low and middle-income countries (LMICs). with a particular emphasis on the food security of individuals impacted by pandemic disruptions Their findings provide reasonably strong evidence that food affordability has been negatively impacted by a reduction in the purchasing power of the majority of LMIC households. Their analysis also highlights how food accessibility has been the most impacted dimension of food security. In Ghana, Onyango et al. (2023) explore the link between food insecurity and pandemic precarity in urban areas during the COVID-19 pandemic using data collected by the World Bank and Ghana Statistical Service (GSS) COVID-19 High-Frequency Phone Survey. The study found that economic deprivation contributed significantly to higher levels of food insecurity. In particular, the pandemic affected wage income and overall household income, coming on the back of the hike in food prices caused by the pandemic.

This finding is corroborated by Tuholske et al. (2020) who observe that global shocks usually affect local food prices, eventually increasing household-level food insecurity. COVID-19 restrictions on human mobility and related measures to curb the spread of the virus triggered a decrease in wages and employment of migrant workers whose jobs are mostly unstable and predominantly informal in nature (IOM, 2020). Also, the closure of schools heightened food insecurity among migrant children who would otherwise have received cooked meals in school to meet basic nutritional needs, exacerbating the vulnerability of migrant schoolchildren and their families to food insecurity (Ahmed et al., 2023).

Crush & Caesar (2018) show that cash remittances usually flow in one direction, from the destinations of migrants to their places of origin, whereas food remittances often flow both ways. In other words, the movement of goods between rural and urban areas is reciprocal. In a survey in

Windhoek, Namibia, 62% of urban households received food remittances from relatives in rural areas in the previous year. Likewise, more than one-third of urban households remitted cash to rural areas. Remitting food from rural to urban areas benefits migrants in all four dimensions of food security (Crush & Caesar, 2018). Similarly, they argue that rural-urban food flows mostly benefit low-income urban households rather than middle and upper-class households by improving their food security. On the other hand, since migrants in the cities remit cash to rural areas, migrant households may be less likely to be food secure in the urban areas than non-migrant households. Without frequent intra-household rural-urban food transfers, the situation for migrant households would be even more dire (Crush & Caesar, 2018).

Crush & Caesar (2018) also review the current understanding of migration and food remittances, as well as their relationship with the four pillars of food security, with an emphasis on Africa. The study highlighted that, in general, internal migrants remit more food than international migrants due to the high expense of transportation, customs duties, and associated challenges in transferring food over international borders. Also, the different types of internal migration in the form of rural-rural, rural-urban, urban-urban, and urban-rural, have different effects on remittances and consequently, food security. For example, their review revealed that most urban households who received food remittances from rural areas associated the importance of their receipts with improved food security. In terms of frequency, urban-urban food remittances were more frequent than rural-urban, primarily due to strong support mechanisms for urban-urban networks, and easier commuting between cities.

Again, transfers between cities are considerably less likely to be affected by the seasonal agricultural cycle. Additionally, urban-urban food remittances are usually characterised by a wider variety of foods and are more likely to improve dietary diversity. However, there is also higher probability of including processed foods that are less healthy, relative to rural-urban food remittances (Crush & Caesar, 2018). However, Crush & Caesar (2016), in comparing rural-urban and urban-urban food remittances, found that households in Gaborone, Botswana, were more likely to be food secure if they got their food from rural sources, as opposed to urban sources alone or combined urban and rural sources.

Tuholske et al. (2020) employ three established metrics, the Household Food Insecurity Access Scale (HFIAS), the Household Food Insecurity Access Prevalence (HFIAP), and the Food Consumption Score (FCS), to analyze data from a 2017 survey of Accra residents to determine the predictors of household food security. The study found that food security, measured by the HFIAS and HFIAP, is significantly influenced by the demographic composition of households. For instance, they show a higher chance of food security in smaller households. This contrasts with Crush & Tawodzera (2017) whose analysis in South Africa found that larger households have a higher likelihood of food security. Specifically, they found that 29% of households with four or more members were food secure, relative to only 9% of

single-person households. Crush & Tawodzera (2017) argue that a household's ability to earn more income grows with household size, which increases the amount of money available for food purchases, eventually improving overall food security.

According to Crush & Tawodzera (2017), there is also a strong correlation between household income and food security. Households with higher income usually have higher food security, compared to households that earn less. Similarly, Tuholske et al. (2020) find that household wealth in Accra as indicated by the asset index increases the probability that a household will be food secure, indicating a relationship between household wealth and food security. Additionally, they found that higher education levels are linked to reduced instances of food insecurity. Households with individuals who had attended or completed tertiary education were more likely to be food secure. However, Onyango et al. (2023) contend that there is no significant correlation between household demographics and food insecurity.

Generally, the literature shows that food remittances enhance food security levels within households in Ghana (Kuuire et al., 2013) and augment the food supply for recipient households, consequently elevating consumption levels (Baako-Amponsah et al., 2024). Sulemana et al. (2019) contend that receiving remittances is often linked to increased household food security, emphasizing the importance of the frequency of remittance receipt. They argue that regular receipt of remittances sustains the connection between remittances and a family's food security. Our study offers important insights on reverse remittances (i.e. the flow of resources from the origin country to migrants abroad (Möbrant, 2012), a phenomenon that is understudied in the migration literature. The situation of reverse remitting is compounded by a global pandemic which had dire consequences across both origin and destination countries.

3. Methodology

We purposively selected Agbogbloshie, Ashaiman, and Madina as the study setting following interactions with a migration expert (the Director of the University of Ghana's Centre for Migration Studies). These comprise key areas where international migrants predominantly settle in the Greater Accra Region of Ghana. The Agbogbloshie area is an important market for food and other goods. It hosts many informal and unapproved settlement structures and has several e-waste dump sites where young men scavenge for scrap metal for sale. Ashaiman is a cosmopolitan town located about 30 km north-east of Accra. It also has a large commodity market and many informal settlements. Madina is a Zongo (a Hausa term for a lodging or camping place for travellers) community located in the northern part of Accra with predominantly Muslim residents. The community hosts a large market with several informal settlements.

According to the IOM (2020), there are at least 253,000 West African migrants in Ghana, most of whom reside in Accra. We used the Yamane (1967) sample size determination

formula to compute a sample size of 420 migrants: 136 from Agbogbloshie and 142 each from Ashaiman and Madina. We used a two-stage sampling technique to select the respondents: the prospective selection of migrant settlements/communities and then multiple snowball procedures (including contacting religious groups, community leaders, and migrant associations) to choose the study participants. We used this approach instead of the standard random sampling technique due to the lack of a documented migrant list. We conducted a quantitative survey in September 2023 to collect retrospective data in the pre-COVID-19, COVID-19 pandemic, and post-COVID-19 periods using experienced and trained enumerators. Recall biases are possible due to retrospective data collected for the pre-COVID and COVID periods, and the fact that people are more likely to look back at the COVID period with higher negative experiences due to the shock and anxiety

associated with the virus. The researchers attempted to minimize the biases by multiple data cross-checks with the participants and thorough investigation of outliers with the enumerators.

This study adopts the United States Department of Agriculture (USDA) Household Food Security measurement framework to assess the food insecurity of West African migrants in the Greater Accra Region of Ghana. The study relies on this framework because it includes specific questions for households with children (Rabbitt et al., 2024), which are not uncommon among migrants. The framework consists of 8 questions, 8 of which were specifically asked if the households included children of up to 17 years (Table 1).

Table 1: Questions Used to Compute Food Insecurity Categories

#	Question	Response type
Questions 1 – 10 for all households		
1	I/my household get worried whether my/our food would run out before I/we got money to buy more in the last 12 months	1= Often true 2= Sometimes true 3= Never true
2	I/my household runout of food and did not have money to get more in the last 12 months	1= Often true 2= Sometimes true 3= Never true
3	I/my household was not able to afford to eat balanced meals in the last 12 months.	1= Often true 2= Sometimes true 3= Never true
4	I/another adult in my household ever cut the size of my or her/his meals or skip meals because there wasn't enough money for food in the last 12 months	1= Yes 2= No
5	If yes above, how often did this happen	1= Almost every month 2= Some months but not every month 3= Only 1 or 2 months
6	I ever eat less than I felt I should because there wasn't enough money to buy food in the last 12 months	1= Yes 2= No
7	I was always hungry but didn't eat because I couldn't afford enough food in the last 12 months	1= Yes 2= No
8	I lost weight because I didn't have enough money for food in the last 12 months	1= Yes 2= No
9	I or other adults in my household have ever gone without eating for a whole day because there wasn't enough money for food in the last 12 months	1= Yes 2= No
10	If yes, how often did this happen?	1= Almost every month 2= Some months but not every month 3= Only 1 or 2 months

#	Question	Response type
Questions 11 – 18 for households that included children aged 0 – 17 years		
11	I/my household relied on only a few kinds of low-cost food to feed my/our children because I was/we were running out of money to buy food in the last 12 months.	1= Often true 2= Sometimes true 3= Never true
12	I/my household couldn't feed my/our children a balanced meal because we couldn't afford it in the last 12 months	1= Often true 2= Sometimes true 3= Never true
13	My child or the children in my household are not eating enough because I/my household just couldn't afford enough food in the last 12 months.	1= Often true 2= Sometimes true 3= Never true
14	I ever cut the size of my child's or other children's meals because there wasn't enough money for food in the last 12 months	1= Yes 2= No
15	My child and other children in my household are always hungry, but I just couldn't afford more food in the last 12 months	1= Yes 2= No
16	My child/other children ever skip meals because there wasn't enough money for food in the last 12 months	1= Yes 2= No
17	If yes, how often did this happen?	1= Almost every month 2= Some months but not every month 3= Only 1 or 2 months
18	My child/other children in my/our household have never gone a whole day without eating because there wasn't enough money for food in the last 12 months	1= Yes 2= No

- Questions 1-3 and 11-13 were coded as *food secure* if the response was “never true” and insecure for the other response options.
- Questions 5, 10, and 17 were coded as *food secure* if the response was “only 1 or 2 months” and insecure for the other response options. The remaining questions were coded as *food secure* if the response was “no” and insecure if the response was “yes”.
- Households without children were classified as having *low food security* if the responses to 3 or more of the first 10 questions suggested food insecurity. They were classified as having *very low food security* if they reported 6 or more food-insecure conditions out of the first 10 questions.
- Households with children aged 0-17 years were classified as having *low food security* if they reported food-insecure conditions in at least 3 of the entire 18-set of questions; they were classified as having *very low food security* if they reported food-insecure conditions in 8 or more of the whole set of 18 questions (Rabbitt et al., 2024).
- Continuous food insecurity scores were generated for the three periods by adding the occurrence questions. In cases where an occurrence question had a frequency follow-up question, they were multiplied before the resultant variable (frequency-of-occurrence) was added to the other occurrence questions to generate the food insecurity score of the households.

The remittance variables were assessed from the following questions:

- I/we have received money from family or friends (in the pre-COVID-19, COVID-19, post- COVID-19 periods); and
- I/we have received food items from family or friends (in the pre-COVID-19, COVID-19, post-COVID-19 periods). The responses were simply 'yes' or 'no'. There were follow-up questions if the respondent answered 'yes.'

This study sought to explore the nexus between remittances and food insecurity among West African migrants in Accra. We use simple descriptive statistical analyses primarily to prospect for patterns of remittance (cash or food) receipts and food insecurity within the three time periods. We ran four basic models using ordinary least squares (OLS) to statistically test the associations between remittances and food insecurity as well as factors that can affect the latter. The following models were estimated:

$$Y_{ij} = \alpha + \beta M_{ij} + \varepsilon_{ij} \quad (1)$$

$$Y_{ij} = \gamma + \delta F_{ij} + \varepsilon_{ij} \quad (2)$$

$$Y_{ij} = \theta + \pi M_{ij} + \rho F_{ij} + \mu_{ij} \quad (3)$$

$$Y_{ij} = \vartheta + \varphi M_{ij} + \omega F_{ij} + \tau' X_{ij} + \sigma_{ij} \quad (4)$$

Where: Y_{ij} is the food insecurity score of the i th migrant in the j th period (pre-COVID, COVID, and post-COVID); M is a binary variable for money remittance; F is a binary variable for food remittance; X is a vector of covariates; and β , δ , π , ρ , φ , ω , and τ are the parameters to be estimated. The OLS analytical approach was used because of the assumed linear relationship between the food insecurity score and the predictors, the efficiency of the estimators, and the simplicity as well as intuitiveness of its application.

The study has several limitations worth noting. First, the sample was drawn from West African migrants living in specific neighbourhoods of Accra and using a non-randomized sampling technique. Therefore, the findings below may not be generalizable to the experiences of all migrants in the city. Second, because the data in this study are cross-sectional, they capture just a moment in time and offer no information on the temporal dimension and

long-term consequences of food insecurity and coping strategies. Further, measuring food security of migrants is difficult due to the recurring nature of its measurement and the frequent mobility of migrants. Lastly, self-reporting data may have resulted in recall or response bias, affecting the accuracy of information collected on sensitive topics such as income and food consumption. Despite these limitations, the study contributes to the limited literature on this topic and future research could address these limitations through larger and more diverse samples, longitudinal data, additional analytical techniques, and extensive qualitative components.

4. Migrant Profile

Nigeria, Niger, and Togo constitute the top three countries of origin of the migrants sampled with Nigeria being the most important source (Figure 1). Migration between Ghana and Nigeria is stimulated by the nature of colonial, historical, economic, and cultural relations between the two nations (Adepoju, 2005; Anarfi et al., 2003; Antwi Bosiakoh, 2009). Most of the respondents had been in Accra for at least six years and were mainly young and male, with an average monthly income of almost GHS 3,000. The data indicate that food insecurity among the migrants was low/moderate before COVID-19, most severe during the COVID-19 period, and less severe at the time of the survey (Table 2). Further, around a tenth of migrants received money remittances (9% before the pandemic, 11% during the pandemic, and 10% in the post-pandemic period). The number of food remittance recipients was also highest during the pandemic and lowest before the pandemic. Additionally, migrant employment was lowest during the pandemic and highest post-pandemic.

Figure 1: Migrants in Ghana by Country of Origin (%)

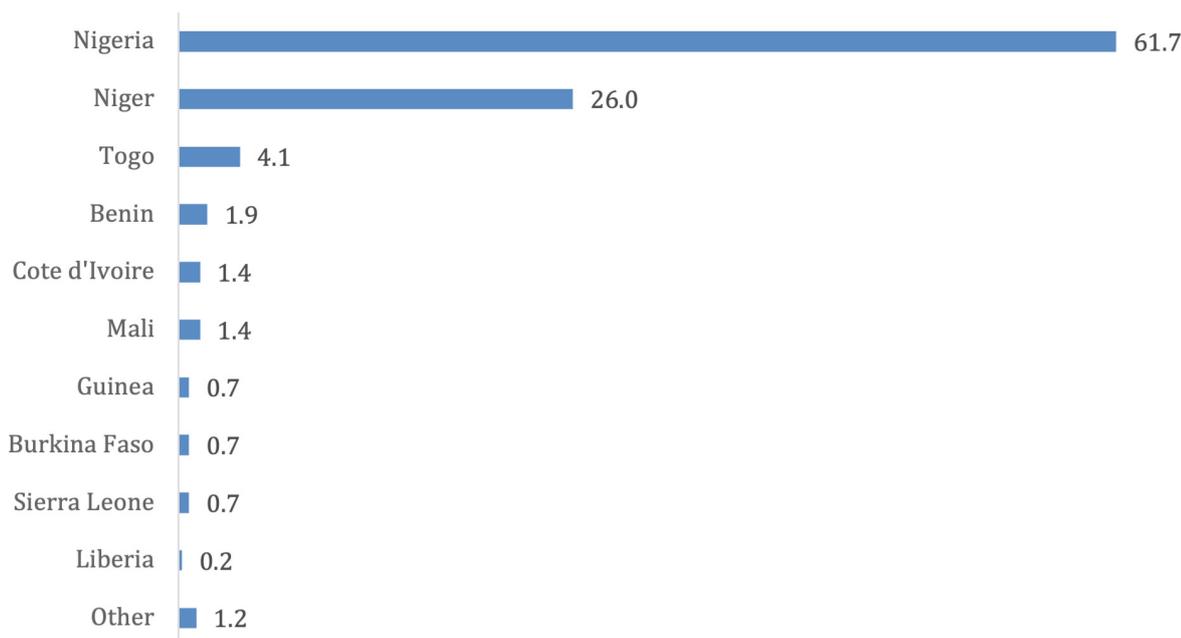


Table 2: Description and summary statistics for selected variables

Variables	Description	Mean	SD
Age	Age of migrant (years)	31.48	8.49
Sex	Sex of migrant (1=female)	0.20	0.40
Maital status	Marital status of migrant (1=Married/Cohabiting)	0.43	0.50
Education	Educational status migrant (1=Some education)	0.68	0.47
Household size	Household size of migrant (number)	2.22	2.10
Dependents	Dependents of migrant (number)	2.68	2.94
Income	Average monthly income of migrant (Ghana Cedi)	2,669.42	6,240.44
Association	Migrant belongs to any association (1=yes)	0.511	0.50
Length of stay	Duration of migrant's stay in Ghana (1=at least 6 years)	0.54	0.50
Food insecurity pre-COVID	Food insecurity score of migrant pre- COVID-19 (number)	7.35	8.27
Food insecurity COVID	Food insecurity score of migrants during COVID-19 (number)	14.03	9.72
Food insecurity post-COVID	Food insecurity score of migrants post-COVID-19 (number)	9.09	8.64
Money remittance pre-COVID	Received money from family and friends pre-COVID-19 (1=yes)	0.09	0.28
Money remittance COVID	Received money from family and friends during COVID-19 (1=yes)	0.11	0.32
Money remittance post-COVID	Received money from family and friends post-COVID-19 (1=yes)	0.10	0.30
Food remittance pre-COVID	Received food items from family and friends pre-COVID-19 (1=Yes)	0.04	0.20
Food remittance COVID	Received food items from family and friends during COVID-19 (1=Yes)	0.07	0.26
Food remittance post-COVID	Received food items from family and friends post-COVID-19 (1=Yes)	0.05	0.21
Employment status pre-COVID	Employment status pre-COVID 19 (1=employed)	0.89	0.31
Employment status COVID	Employment status during COVID-19 (1=employed)	0.79	0.41
Employment status post-COVID	Employment status post-COVID-19 (1=employed)	0.96	0.19

5. Migration and Employment

The primary motivation for migrating to Ghana was work-related (cited by 86% of the migrants), either to pursue employment opportunities or business activities (see Figure 2 and Table 3). Additionally, 35% of migrants moved to experience better living conditions than at home. Other reasons (cited by less than 10%) included family reunification (7.6%), education (3.5%), lack of security (1.4%), food insecurity (1%), and healthcare access (0.2%).

Figure 2: Reasons for Migration to Ghana (%)

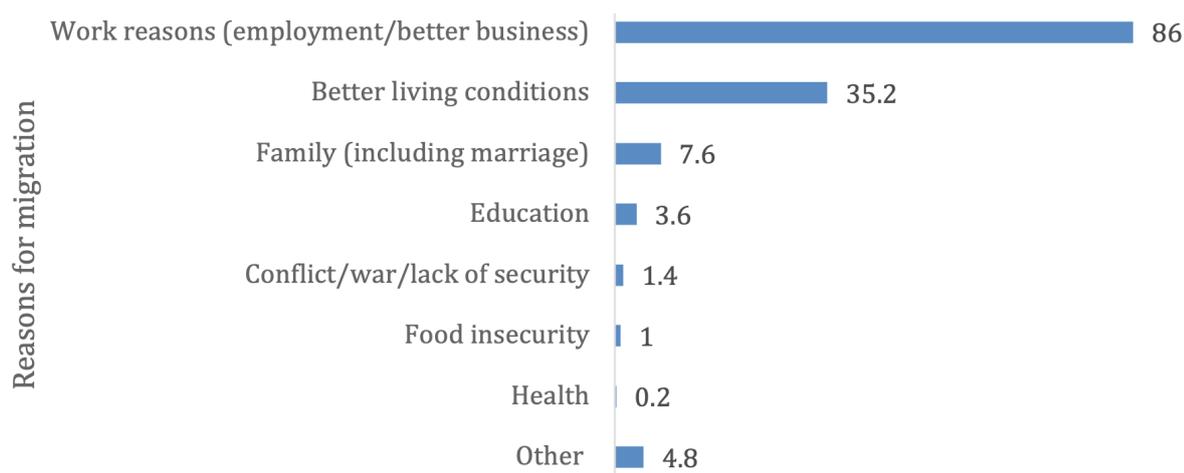


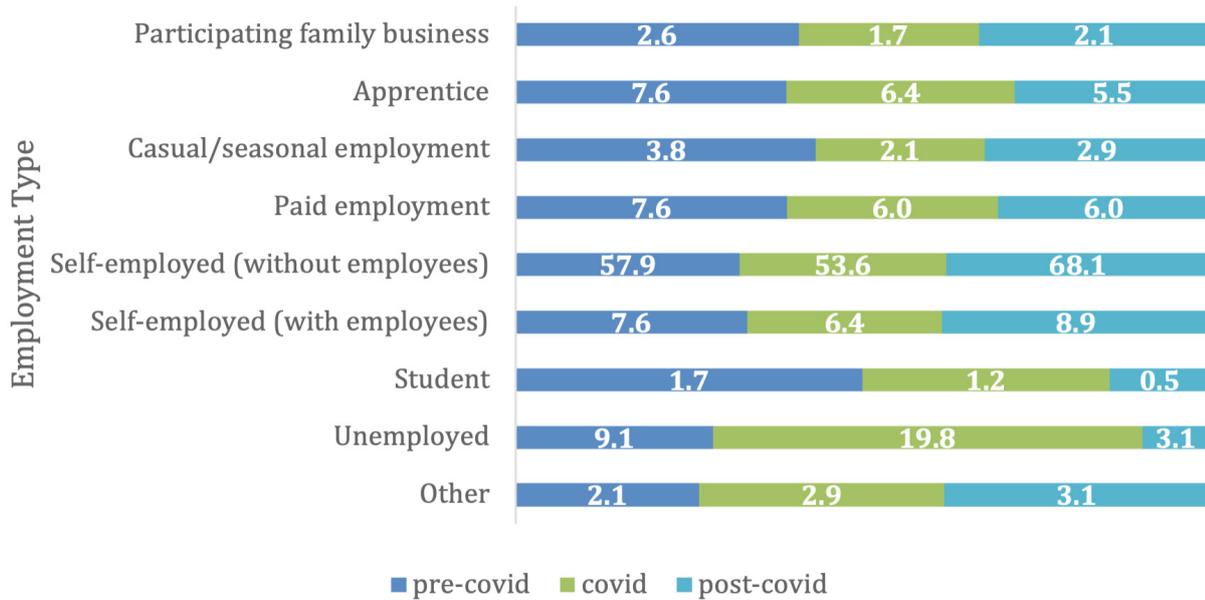
Table 3: Reasons for Migrating to Ghana by Nationality (%)

Reasons	Nationality									
	NG	CI	TG	BEN	BF	GUI	LIB	MAL	NIG	SL
Work reasons	86.1	100.0	70.6	75.0	100.0	100.0	100.0	50.0	90.8	66.7
Family	9.3	0	11.8	12.5	0	0	0	0	3.7	0
Better living conditions	32.1	50.0	29.4	25.0	0	33.3	0	50.0	44.0	33.3
Education	3.1	0	5.9	12.5	0	33.3	0	0	3.7	0
Lack of security	0.8	16.7	0	12.5	0	0	0	0	1.8	0
Health	0.4	0	0	0	0	0	0	0	0	0
Food insecurity	0.4	0	11.8	0	0	0	0	0	0.9	0
Other	5.4	16.7	5.9	0	0	0	0	0	1.8	0
Valid cases	259	6	17	8	3	3	1	6	109	3

Note: NG=Nigeria, CI=Cote D'Ivoire, TG=Togo, BEN=Benin, BF=Burkina Faso, GUI=Guinea, LIB=Liberia, MAL=Mali, NIG=Niger, and SL=Sierra Leone.

The COVID-19 period was characterized by various government restrictions to control the spread of the virus, including a partial lockdown and the closure of businesses and schools. In a largely informal labour market, with limited safety nets for citizens and no unemployment insurance schemes for citizens or migrants, the impact of the pandemic on livelihoods was severe. The survey data show that migrant unemployment was highest during the pandemic (at 19.8%) although post-pandemic unemployment is lower (3.1%) than the pre-pandemic level (9.1%) (Figure 3). In the pre-COVID-19 period, most migrants were self-employed without any employees (57.9%), with only 7.6% being self-employed entrepreneurs providing job opportunities for others. The percentage of self-employed migrants without employees decreased to 53.6% during COVID-19, and the self-employed with employees also declined to 6.4%. However, self-employment figures improved post-COVID.

Figure 3: Changes in Employment Distribution (%)



6. Food Insecurity and Remittances

Figure 4 shows that 37% of the migrant households were food secure in the pre-COVID period, a figure that dropped to 14% during the pandemic and increased again to 29% post-pandemic. The percentage of households with low levels of food security hovered around 40% in all three periods. However, as many as 48% of the migrant households had very low food security during the COVID-19 period, compared with 24% before the pandemic and 29% afterward.

Figure 4: Food Security Categories in the Pre-COVID, COVID, and Post-COVID Periods (%)

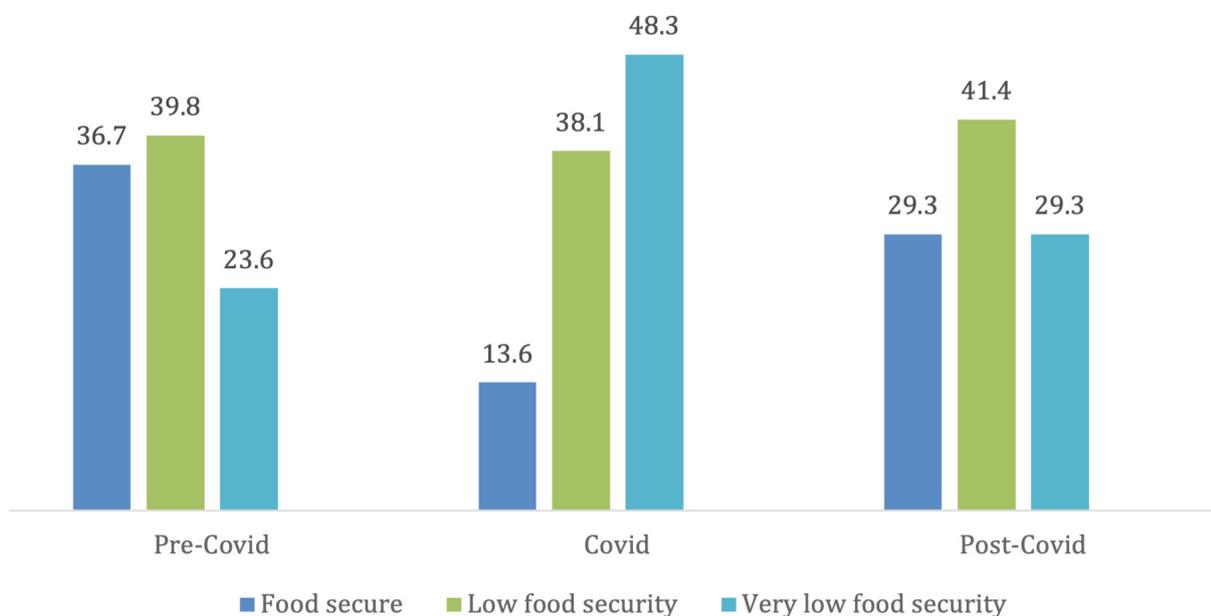
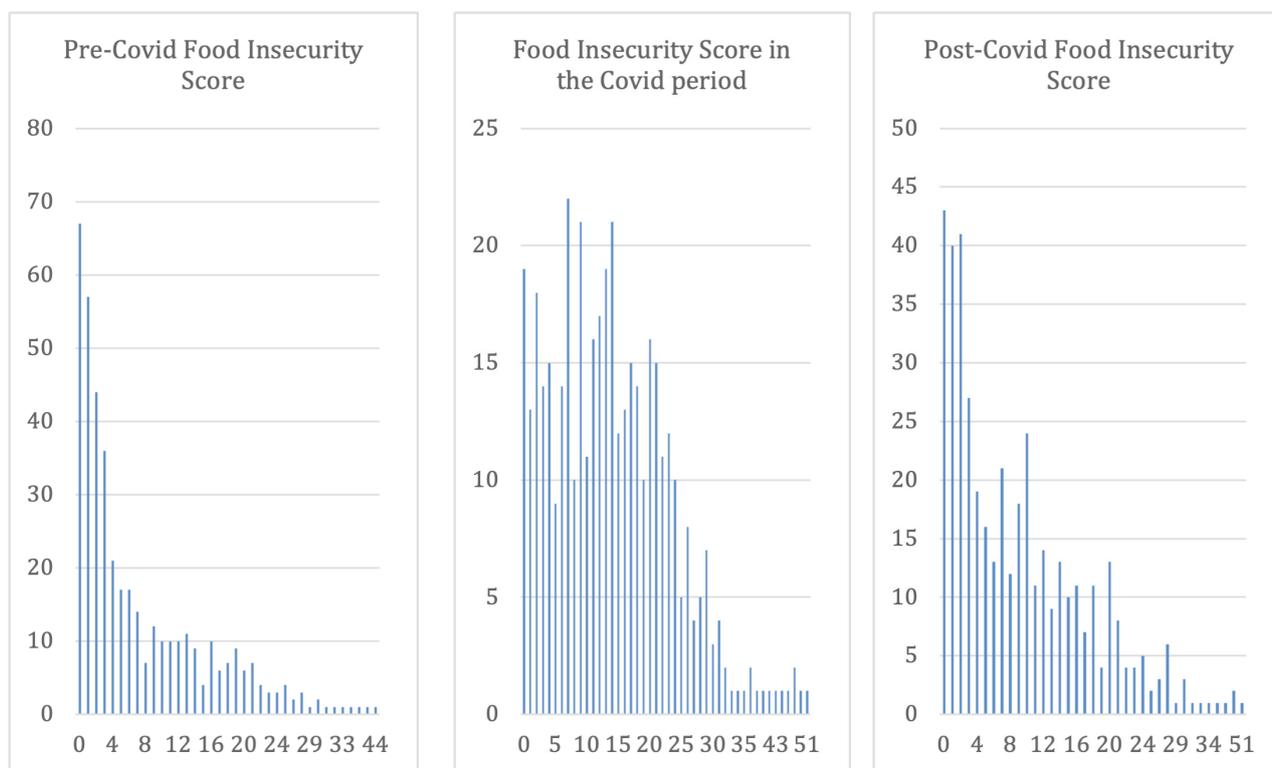


Figure 5 shows the distribution of households on the continuous scale from 0 to 52 in all three periods. The distributions are broadly similar in the pre-COVID and post-COVID periods, with more households being either food secure or having low food security. However, as the figure shows, many households experienced higher levels of food insecurity during the pandemic.

Figure 5: Distribution of Households on Food Security Scale



Tables 4 and 5 show that West African migrants who receive money or food remittances face food security challenges. During the COVID period, only 17 percent of the migrants who received monetary remittances were food secure, compared to 41.7 percent in the pre-COVID era and 35.7 percent in the post-COVID era. Many of these migrants (51 percent) experienced very low food security during the pandemic. Similarly, among migrants receiving food remittances, more than half (67.7) had very low food security during the COVID period, compared to 38.9 percent and 47.7 percent in the pre- and post-COVID periods, respectively.

Table 4: Association Between Money Remittances Received and Food Insecurity (% of respondents)

Food insecurity category	Money Remittance					
	Pre-Covid		Covid		Post-Covid	
	Yes	No	Yes	No	Yes	No
Food secure	41.67	36.2	17.02	13.14	35.71	28.57
Low food security	33.33	40.36	31.91	38.87	28.57	42.86
Very low food security	25.0	23.44	51.06	47.99	35.71	28.57
Sample (n)	36	384	47	373	42	378
Pearson chi2 (Prob)	0.71 (0.701)		1.077 (0.584)		3.18 (0.204)	

Table 5: Association between Food Remittances Received and Food Insecurity (% of respondents)

Food insecurity category	Food Remittances					
	Pre-Covid		Covid		Post-Covid	
	Yes	No	Yes	No	Yes	No
Food secure	22.22	37.31	6.45	14.14	15.79	29.93
Low food security	38.89	39.8	25.81	39.07	36.84	41.65
Very low food security	38.89	22.89	67.74	46.79	47.37	28.43
Sample (n)	18	402	31	389	19	401
Pearson chi2 (Prob)	2.95 (0.229)		5.19 (0.075)		(0.169)	

7. Key Factors Influencing Food Insecurity

Table 6, 7, and 8 show the regressions results for the three time periods. For each of the periods, we ran four models: Models 1 and 2 are more parsimonious and regress food insecurity on money remittance and food remittance respectively. Model 3 regresses food security on both remittance variables, whereas Model 4 repeats Model 3 and adds a set of covariates. The results indicate that food insecurity was lower for recipients of money remittances compared to non-recipients, although statistically insignificant except in the post-COVID-19 period (Models 1, 3, and 4). Conversely, the recipients of food remittances were more food insecure compared to non-recipients, across all periods and models, with the highest statistical significance during the pandemic. Notably, most of the migrants, irrespective of type of remittance received or not received, were moderate to severely food insecure.

The results from Model 4 in Tables 6, 7, and 8 show that educated as well as employed migrants had lower food insecurity scores compared to the uneducated or unemployed migrants. Therefore, these migrants were more food secure. Education has been shown to enhance migrants' ability to make informed decisions which may reduce the risk of uncertainty about employment options (Martey & Armah, 2021). The results also show that food insecurity is inversely related to migrants' period of stay in Ghana, access to information about employment, housing, and electricity. Migrants' period of stay is likely to enhance ties and bonds with other migrants and Ghanaians and could provide a social safety net during crisis periods. In pre-pandemic era, migrants with longer stay might have built social networks or explored economic opportunities that were more effective in ensuring the availability of food than in the pandemic and post-pandemic eras (Schotte et al., 2021). As expected, household size was associated with high food insecurity during and after the pandemic.

Table 6: OLS Regression Models of Food Insecurity in the Pre-COVID Period

Variables	Model 1	Model 2	Model 3	Model 4
Received money (Ref: No)				
Yes	-0.441 (1.488)	-	-0.904 (1.513)	-0.143 (1.463)
Received food items (Ref: No)				
Yes	-	6.080** (2.379)	6.209*** (2.396)	3.295 (2.011)
Sex of respondent (Ref: Male)				
Female	-	-	-	0.487 (1.026)
Marital status (Ref: Single)				
Married/Cohabiting	-	-	-	-1.360 (0.890)
Educational level (Ref: None)				
Some level of education	-	-	-	-2.647*** (0.902)
Period of stay in Ghana (Ref: 5 years or less)				
More than 5 years	-	-	-	-1.346* (0.769)
Number of dependents	-	-	-	0.221* (0.121)
Household size	-	-	-	0.268 (0.170)
Access to info on employment, housing (Ref: No)				
Yes	-	-	-	-2.380** (1.133)
Access to electricity (Ref: No)				
Yes	-	-	-	-5.173*** (1.682)
Access to quality and adequate water (Ref: No)				
Yes	-	-	-	-0.361 (1.522)
Belong to an association (Ref: No)				
Yes	-	-	-	0.574 (0.766)
Employment status (Ref: Unemployed)				
Employed	-	-	-	-2.029 (1.353)
Household monthly income	-	-	-	-0.000** (0.000)
Constant	7.385*** (0.421)	7.087*** (0.404)	7.159*** (0.417)	17.775*** (2.038)
Observations	420	420	420	420
R-squared	0.000	0.022	0.023	0.180

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 7: OLS Regression Models of Food Insecurity during the COVID Period

Variables	Model 1	Model 2	Model 3	Model 4
Received money (Ref: No)				
Yes	0.995	–	–0.059	–0.045
	(1.605)	–	(1.610)	(1.613)
Received food items (Ref: No)				
Yes	–	6.723***	6.737***	5.632***
	–	(2.134)	(2.159)	(2.174)
Sex of respondent (Ref: Male)				
Female	–	–	–	1.957
	–	–	–	(1.237)
Marital status (Ref: Single)				
Married/Cohabiting	–	–	–	0.256
	–	–	–	(1.021)
Educational level (Ref: None)				
Some level of education	–	–	–	–2.768***
	–	–	–	(1.048)
Period of stay in Ghana (Ref: 5 years or less)				
More than 5 years	–	–	–	–0.426
	–	–	–	(0.904)
Number of dependents	–	–	–	0.148
	–	–	–	(0.133)
Household size	–	–	–	0.508**
	–	–	–	(0.249)
Access to info on employment, housing (Ref: No)				
Yes	–	–	–	–0.758
	–	–	–	(1.127)
Access to electricity (Ref: No)				
Yes	–	–	–	–5.444***
	–	–	–	(1.822)
Access to quality and adequate water (Ref: No)				
Yes	–	–	–	–2.212
	–	–	–	(1.607)
Belong to an association (Ref: No)				
Yes	–	–	–	1.124
	–	–	–	(0.900)
Employment status (Ref: Unemployed)				
Employed	–	–	–	–2.007*
	–	–	–	(1.165)
Household monthly income	–	–	–	–0.000***
	–	–	–	(0.000)
Constant	13.920***	13.535***	13.540***	22.643***
	(0.499)	(0.476)	(0.497)	(2.157)
Observations	420	420	420	420
R-squared	0.001	0.033	0.033	0.170

Robust standard errors in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 8: OLS Regression Models of Food Insecurity in the Post-COVID Period

Variables	Model 1	Model 2	Model 3	Model 4
Received money (Ref: No)				
Yes	2.045	–	1.808	2.569
	(1.670)	–	(1.690)	(1.649)
Received food items (Ref: No)				
Yes	–	4.483*	4.274*	2.335
	–	(2.481)	(2.520)	(2.006)
Sex of respondent (Ref: Male)				
Female	–	–	–	2.316*
	–	–	–	(1.203)
Marital status (Ref: Single)				
Married/Cohabiting	–	–	–	–0.242
	–	–	–	(0.958)
Educational level (Ref: None)				
Some level of education	–	–	–	–1.763**
	–	–	–	(0.889)
Period of stay in Ghana (Ref: 5 years or less)				
More than 5 years	–	–	–	–0.448
	–	–	–	(0.832)
Number of dependents	–	–	–	0.179
	–	–	–	(0.133)
Household size	–	–	–	0.367**
	–	–	–	(0.151)
Access to info on employment, housing (Ref: No)				
Yes	–	–	–	–2.846***
	–	–	–	(1.039)
Access to electricity (Ref: No)				
Yes	–	–	–	–5.319***
	–	–	–	(1.576)
Access to quality and adequate water (Ref: No)				
Yes	–	–	–	0.986
	–	–	–	(1.221)
Belong to an association (Ref: No)				
Yes	–	–	–	–0.315
	–	–	–	(0.832)
Employment status (Ref: Unemployed)				
Employed	–	–	–	–3.321
	–	–	–	(2.225)
Household monthly income	–	–	–	–0.000***
	–	–	–	(0.000)
Constant	8.884***	8.885***	8.714***	18.381***
	(0.432)	(0.424)	(0.430)	(2.337)
Observations	420	420	420	420
R-squared	0.005	0.012	0.016	0.167

Robust standard errors in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

8. Coping Strategies by Food Insecure Migrants

Deschak et al. (2022) report that individuals facing moderate to severe food insecurity mostly cope by reducing food quantity and significantly altering frequency of food intake. Melese et al. (2021) add that at the community level, households cope by relying on less preferred and less expensive food followed by participating in off-farm activities and borrowing food. West African migrants in Accra employ several strategies to cope with food insecurity. These include opting for less expensive foods, seeking help from friends and family, purchasing food on credit, sending household members to eat elsewhere, limiting food portion sizes at

mealtimes, restricting adult consumption so children can eat, rationing available money, opting for prepared foods, reducing the number of daily meals, or skipping meals for entire days. These strategies have dire nutrition and health consequences for household members.

Figure 6 shows that before the COVID-19 outbreak, 30 percent of the respondents with food insecurity coped by relying on less preferred or less expensive foods once a month, and 27 percent at least twice a week. A similar trend was observed in the post-COVID-19 period (31 percent and 29 percent). However, during the pandemic, the frequency of reliance on less preferred or expensive foods increased to 37 percent of the respondents.

Figure 6: Frequency of Relying on Less Preferred and Less Expensive Foods (%)

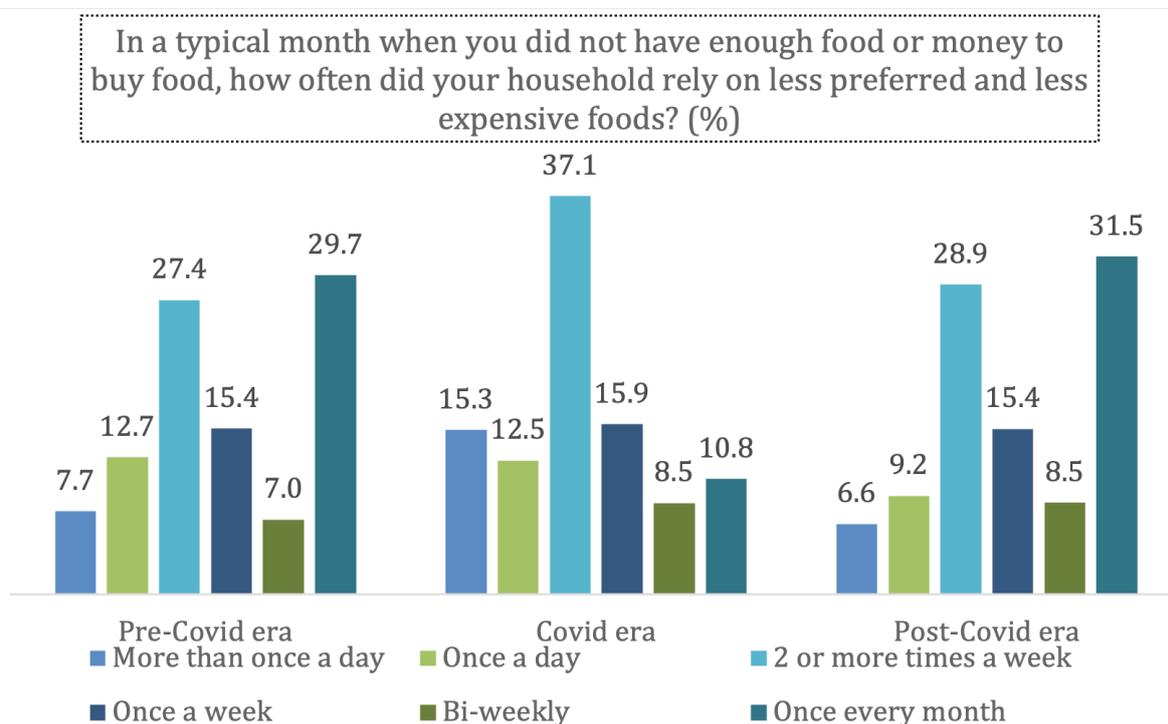
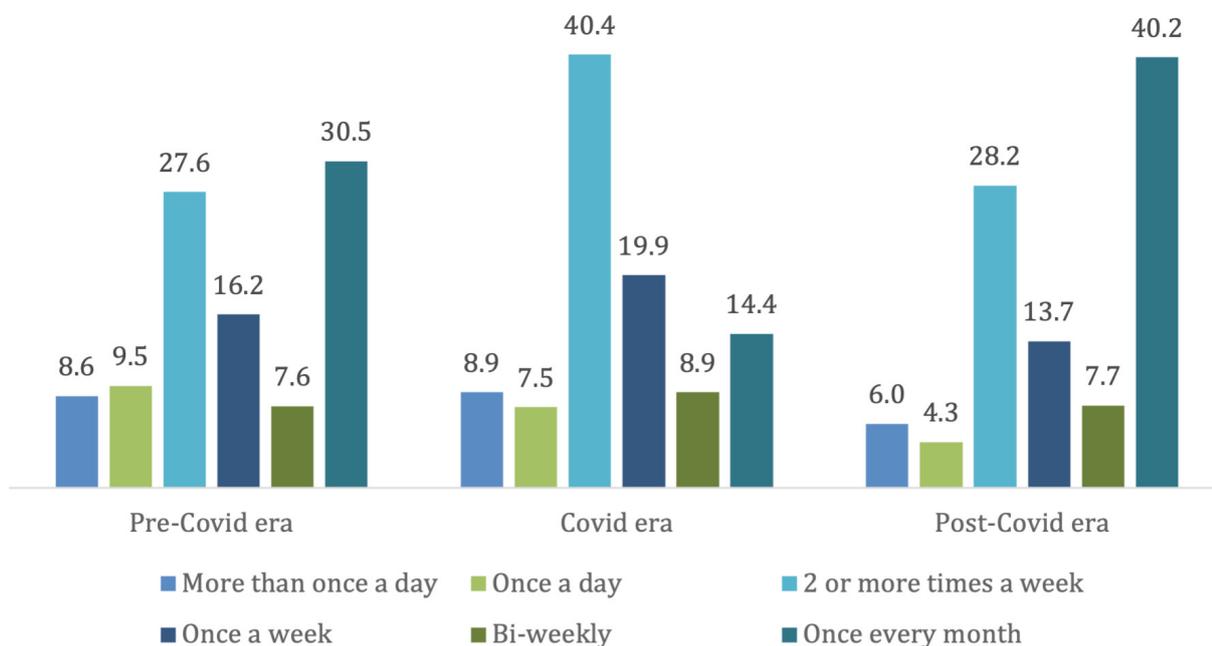


Figure 7 shows that, before the pandemic, about 30 percent of migrants relied on the benevolence of relatives and friends once a month, while 28 percent did so at least twice a month. During the pandemic, however, frequent reliance on others rose to 40 percent whereas infrequent reliance halved. In the post-COVID-19 period, frequent and occasional reliance returned to their pre-pandemic levels (at 29 percent and 31 percent respectively).

Figure 7 Frequency of Borrowing Food or Relying on Help from Friends/Relatives (%)

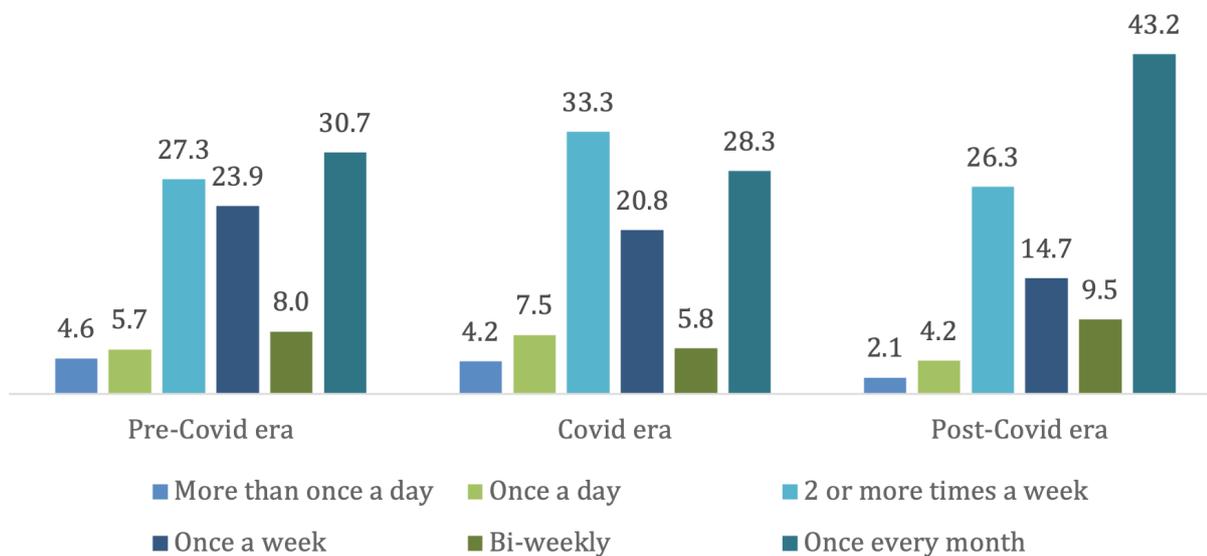
In a typical month when you did not have enough food or money to buy food, how often did your household borrow food or rely on help from a friend or relative? (%)



A similar trend is observed for food insecure migrants who had to purchase food on credit as a coping strategy. Most migrants in this category did so once a month in the pre- and post- COVID-19 periods. However, during the COVID-19 pandemic, about 33 percent bought food on credit at least twice a week (Figure 8). The lockdown reduced the earning capacity of many households, especially the less educated and self-employed. These households had to access food on credit as a response to food insecurity.

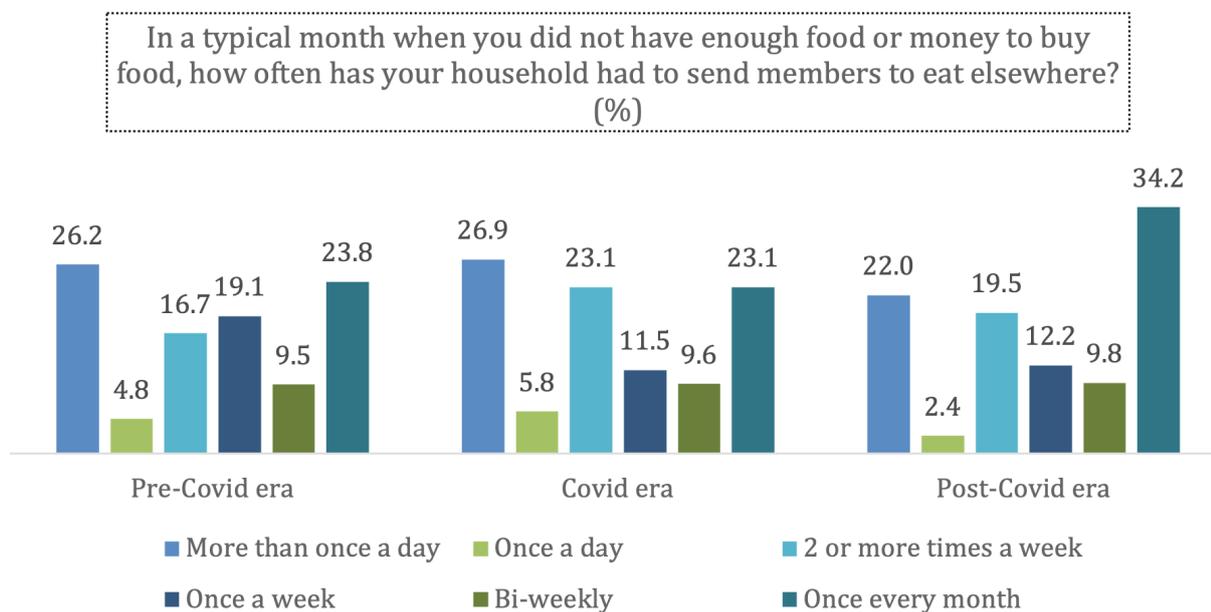
Figure 8: Frequency of Purchasing Food on Credit (%)

In a typical month when you did not have enough food or money to buy food, how often did your household purchase food on credit? (%)



The frequency of sending household members to eat elsewhere also increased during the COVID period and declined to below pre-pandemic levels in the post- COVID-19 period (Figure 9). During the pandemic, 45 percent of households used this strategy more than twice a week (including 12 percent daily) compared with 38 percent (and 10 percent) pre-COVID-19 and 33 percent (and 6 percent) post COVID (Figure 9).

Figure 9: Frequency of Sending Household Members to Eat Elsewhere (%)



Among food-insecure migrants the practice of limiting portion sizes during mealtimes was common (Figure 10). In all three periods, a similar number adopted this strategy two or more times a week (between 34 and 26 percent). However, the frequency of daily use of this strategy increased from 19 percent before the pandemic to 28 percent during the pandemic, before declining to 13 percent afterwards. Conversely, restricting adult consumption to ensure children’s access to food was a rare occurrence – typically once a month for many households (Figure 11).

Figure 10: Frequency of Limiting Portion Size at Mealtime (%)

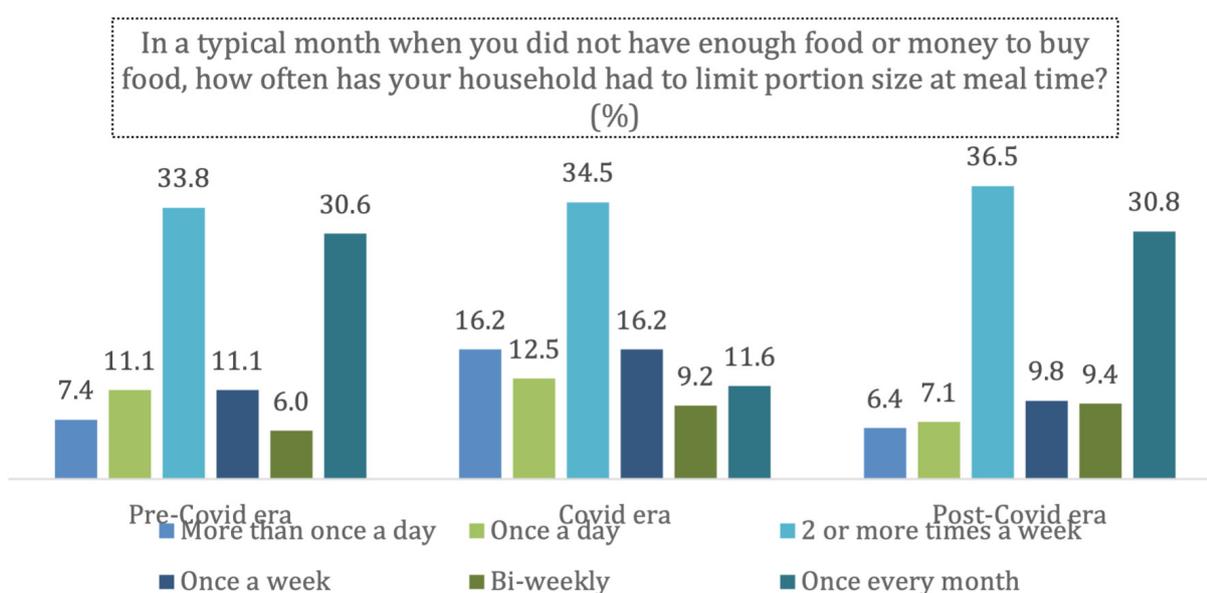
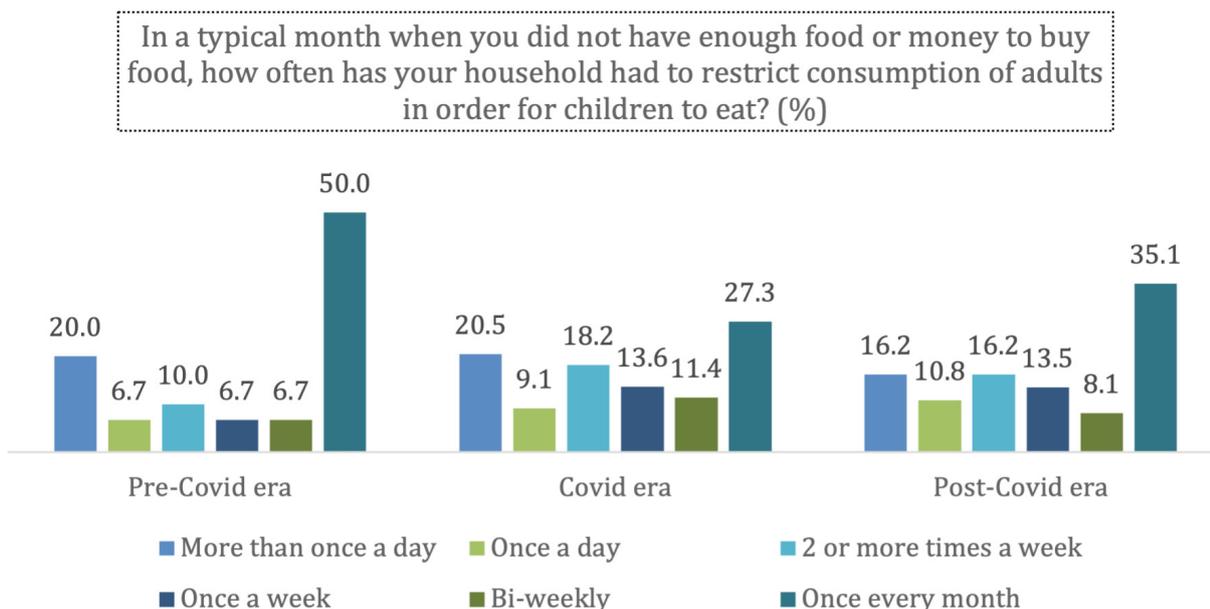


Figure 11: Frequency of Restricting Consumption by Adults for Children to Eat (%)



Some of the food-insecure migrants managed their limited resources by opting for prepared food rather than cooking themselves. This strategy was employed slightly more frequently during the pandemic and then returned to pre-pandemic levels (Figure 12). Similarly, households that coped with food insecurity by reducing the number of meals eaten in a day increased in frequency during the pandemic from 21 percent to 26 percent daily before dropping to 20 percent post-pandemic (Figure 13). The numbers occasionally adopting this strategy (that is, once a month) declined during the pandemic. These frequency shifts suggest heightened reliance on this coping mechanism during the pandemic. Skipping meals for an entire day also increased in frequency during the pandemic at least twice per week (Figure 14). These results agree with the findings of Crush & Tawodzera (2017) that during times of crisis, migrant households resort to cutting back on food consumption while trying to maintain affordability. They also agree with Akparibo et al. (2021) who found that urban households resort to less desirable and unhealthy coping techniques to deal with food insecurity and end up frequently choosing quantity over quality.

Figure 12: Frequency of Rationing Money and Buying Prepared Food (%)

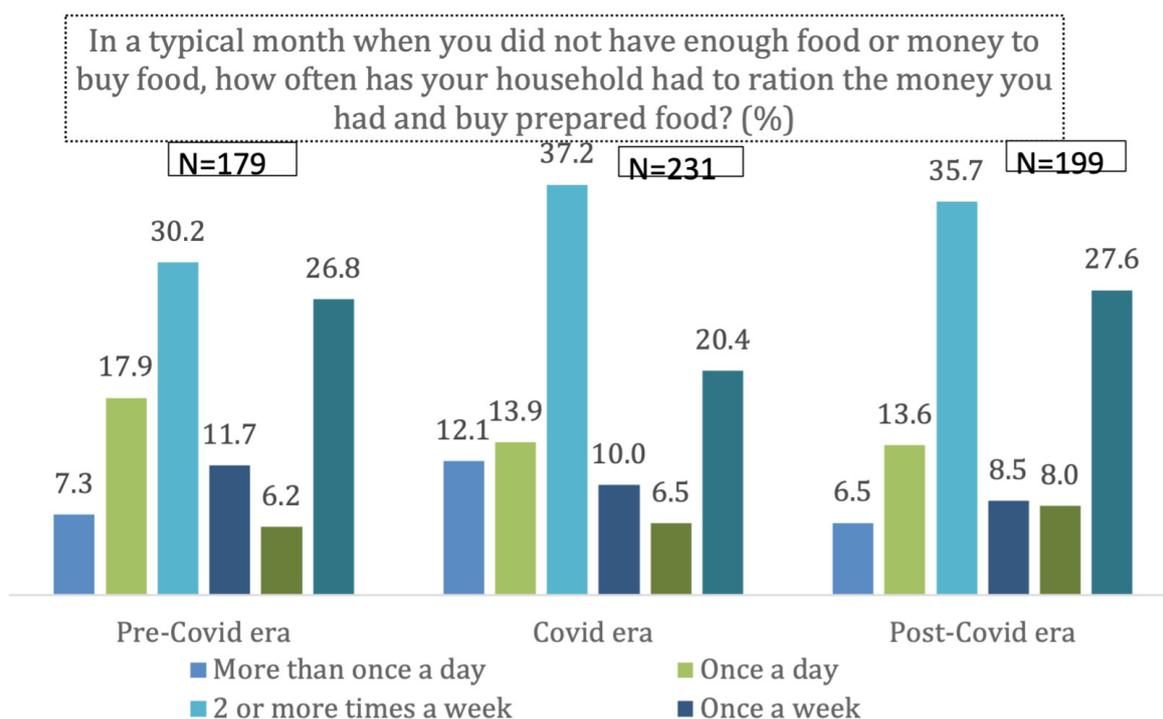


Figure 13: Frequency of Reducing the Number of Meals in a Day (%)

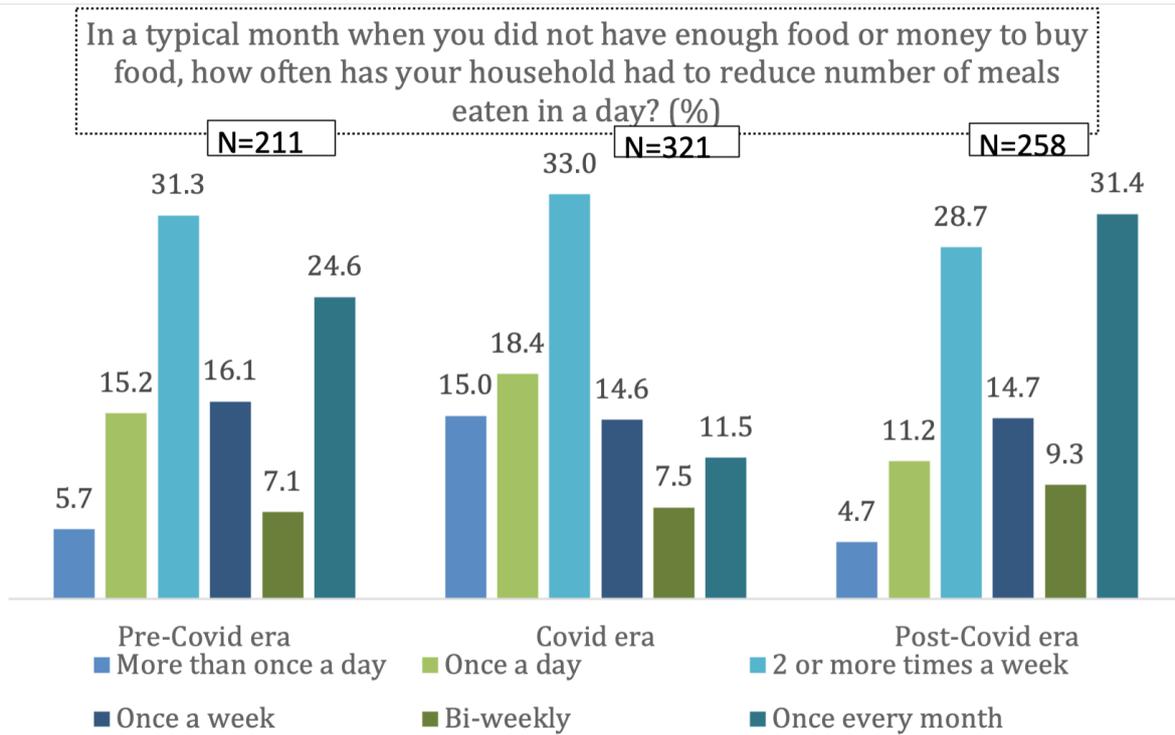
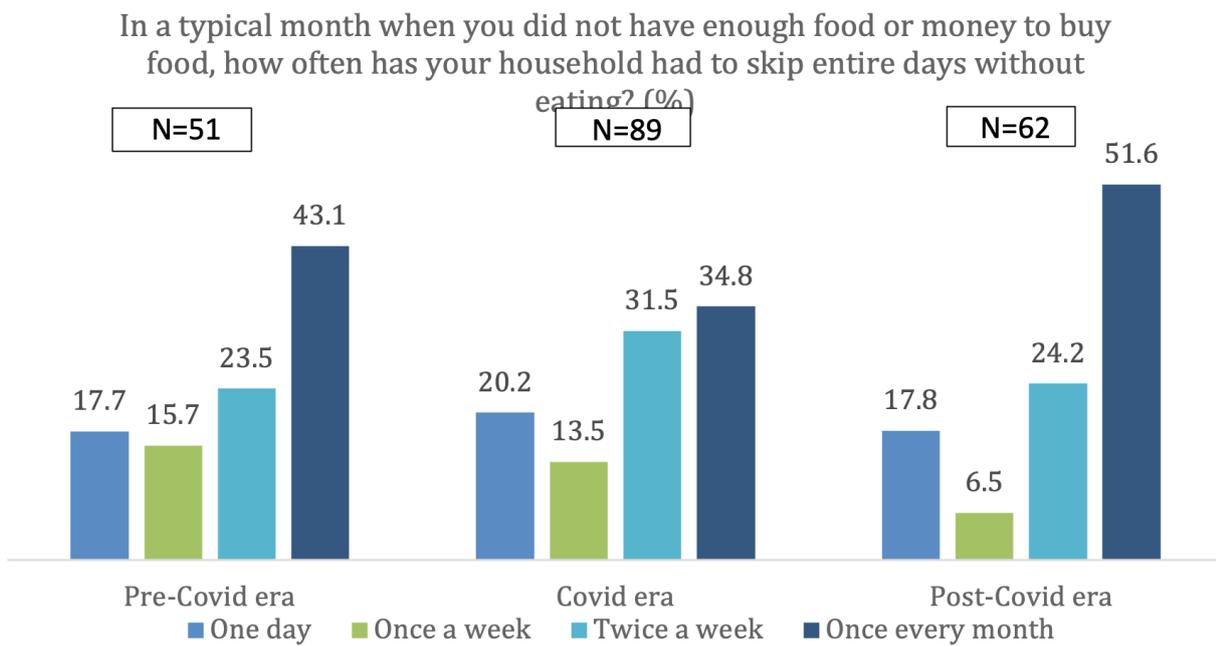


Figure 14: Frequency of Coping by Not Eating for a Whole Day (%)



9. Conclusion

This paper adds to the limited existing literature on the food security status of international, and especially West African, migrants in urban areas such as Accra. The survey results show the vulnerable food insecurity situation of these migrants, that was further intensified by the shock of the COVID-19 pandemic. Despite receiving remittances from relatives or friends, a substantial proportion experienced an increase in moderate to severe food insecurity during the COVID-19 crisis.

The main lesson is that although remittances are generally expected to contribute to food security, the relationship is not as straightforward as it might seem in the case of international migrants in urban destinations. For example, migrants who received food remittances reported higher levels of food insecurity, especially during the COVID-19 pandemic. This counterintuitive result suggests that food remittances alone may not mitigate the complex web of problems underlying migrant survival without access to decent and nutritious food. The survey findings also indicate the variety of coping mechanisms adopted by food-insecure migrants, from consuming less preferred or cheaper foods to reducing meal sizes, not eating meals at all, and borrowing food or funds from social networks. Although these strategies may have helped in the short term during the COVID-19 pandemic, they are rarely sustainable and have long-term health and well-being consequences for migrants.

The results highlight the importance of tailored interventions and policies that can strengthen the food security and overall resilience of international migrants in urban contexts. More specifically, the findings underscore the necessity of the following:

- Implementing comprehensive social safety nets that address the specific needs of migrants in terms of affordable housing, job opportunities, and skills development.
- Investing in food, health, and other necessary information and support services for food assistance programs and healthcare and essential services for migrants, particularly in times of crisis like pandemics.
- Supporting resilient urban food systems and infrastructure to secure food availability and affordability to reach at-risk populations such as international migrants.
- Supporting income opportunities and financial inclusion projects to improve migrants' economic resilience and reduce their vulnerability to hunger.

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