

Unemployment, Migration and Food Insecurity in Developing Countries: A Systematic Review

Abyot Seifu Gebre¹ and Fasil Eshetu^{1*}

¹Department of Economics, Arba Minch University, Arba Minch, Ethiopia

*Corresponding Author Email: bekatfech@gmail.com

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Abstract

This systematic review paper examines the interrelations between unemployment, migration, and food security in developing countries, focusing on Sub-Saharan Africa and South Asia. Utilizing a structured search across databases like Scopus, Web of Science and Google Scholar, it analyzes studies from 2000 to 2023 following PRISMA guidelines. The paper applies Push–Pull Migration Theory and the Food Security Framework, highlighting how unemployment acts as a push factor and detailing food insecurity through its dimensions: availability, access, utilization, and stability. The effects of employment and migration patterns on household food security outcomes are clarified by this integrated approach. Food insecurity also has a beneficial effect on migration, resulting in rural outmigration because of poor connectivity and infrastructure. Food insecurity eventually results from persistent unemployment. A significant push factor that encourages workers to relocate is high unemployment. Once they do, receiving regions gain from an influx of labour, and the lower labour force at home lowers unemployment rates. In order to illustrate the many causes, mechanisms, and results in distinct geographical contexts, the paper synthesizes region-specific evidence and reflects current trends. Additionally, it highlights macro-level elements such as labour market circumstances, climate variability, and governance. Results from the systematic review show that while migration, especially through remittances, may, depending on the situation, lessen household vulnerability, unemployment can cause migration. Young children, however, are susceptible to misinformation and deceit over the advantages of migrating. However, the result highlights that the interaction between these variables is not one-dimensional; rather, multiple factors are connected to one another. Policy recommendations and development practitioners' practical insights, policy proposals concentrate on both short-term tactics like expediting remittances and long-term solutions like job creation, social protection programs, and climate-adaptive measures. Policy implications also show that, in order to address migration and food insecurity in the regions under review,

long-term strategies must establish local jobs, bolster social protection, and adopt climate-adaptive agricultural practices. Short-term interventions should facilitate remittance flows for household food security. Moreover, Social protection programs also increase household resilience to climate and economic vulnerabilities. Policymakers and development practitioners can benefit from the review's region-specific evidence. Since food insecurity and migration are related to emerging nations, climate adaption, and resilient livelihoods, the report recommends worldwide policy investment in sustainable rural development. Additionally, it recommends that the government and nonprofit organizations take action to address issues with food insecurity, migration, and unemployment.

Key words: Unemployment, Migration, Food Insecurity, Developing Countries, systematic review, rural development.

INTRODUCTION

Developing nations are those with a gross national income (GNI) of less than \$12.696 USD. According to the World Bank (Region & Unit, 2022), 80 of the 217 countries are categorized as high income countries and the rest 137 countries are termed as developing countries. Most of the developing countries suffer from the major macroeconomic problems such as food insecurity, unemployment and migration. Food availability disparities are driven by income differences, leading to migration and risk management strategies. Food Insecurity, established by the World Food Conference, ensures access to nutritious, safe, and culturally preferred foods. In low income countries like Ethiopia, increasing agricultural output is crucial for poverty reduction (Aliyu et al, 2021; Saint et al, 2019). In order to increase high employment and lower the rate of food insecurity, a study in Nigeria focusing on unemployment and food insecurity placed a strong emphasis on the development of infrastructure and the construction of an environment that is favorable for small companies and farming operations (Ubi & Bernard, 2023). The majority of research on migration which are mentioned below focus on climate change as the primary factor contributing to food insecurity. In a more thorough explanation, migration also impacts rural unemployment, which eventually results in forced migration. It is yet unknown, though, if food production, loss of livelihood, or rural out-migration are directly impacted by climate (Tuholske, 2024).

Sub-Saharan Africa is the most food insecure region, with Eastern Africa experiencing the highest undernourishment rate (Mulazzani et al, 2020). Studies on migration and food security in Ethiopia and Tanzania focus on internal rural-urban migration driven by climate, economic, and

security motivations (Lemlem et al, 2022). However, scholarship on the links between rural unemployment, migration, and food insecurity remains unclear. A number of studies showed that debates on the nexus between food security, unemployment, and migration are cross-cutting in Africa (Atiglo et al, 2022). Mulazzani et al (2020) stressed that despite a number of advancements, we still don't fully understand the intricate causal-effect relationships that connect these elements, particularly how much food security concerns influence migratory patterns and how much migration can influence food security in turn.

Climate change threatens Asian countries' agricultural industries also, impacting food availability, livelihoods, nutrition, and policy making (Diaz-Bonilla, 2023). The unemployment with the low productive agriculture sector leads to reduced food availability, increased prices, poverty, and poor nutritional status (Lin et al, 2022). Rural out-migration, particularly among young people, is a coping mechanism to unemployment. Rising commodity prices, political instability, and extreme weather exacerbate the distribution gap, leading to forced migration (Mazher et al, 2020). In addition, Haini et al (2023) depicted that unemployment rates have a negative relationship with food security in the sample of developing countries, where high levels of unemployment highly affects food security by aggravating income inequality among citizens.

The overall objective of this paper is to review the nexus between unemployment, migration & food security. More specifically, it tries to address the relationship between unemployment and migration, unemployment and food security, and migration and food security in developing countries. The remaining parts of this paper are included five sections. The first section includes methodology of the systematic review. Then, it includes the literature review that is divided into theoretical and empirical literature. And finally, the conclusion and policy implications are presented in the last section.

METHODOLOGY OF THE SYSTEMATIC REVIEW

This systematic review examined the relationships between food security, migration, and unemployment using an organized methodology. Key phrases associated with these three topics were used in targeted searches in Scopus, Web of Science and Google Scholar to find pertinent papers published between 2000 and 2023. Only English-language, peer-reviewed research works were included; publications which don't include a clear methodology in their works were excluded from this systematic review paper. After methodically extracting data from the chosen

studies, a narrative synthesis was employed to detect commonalities, divergent conclusions, and gaps in the body of knowledge. It began with 45 records, removing 4 duplicates, leaving 41 for review. After excluding 14 for irrelevance and 2 for insufficient focus, 25 studies were synthesized following PRISMA guidelines. While exact database counts were not retrospectively disaggregated, the selection process adhered to PRISMA standards, ensuring methodological clarity and reproducibility.

Table 1: PRISMA Summary of Study Selection

S/n	Stage of Review Process	Number of Studies
1	Records identified through database searching	45
2	Records after duplicates removed	41
3	Records screened (title and abstract)	41
4	Records excluded	14
5	Full-text articles assessed for eligibility	27
6	Full-text articles excluded	2
7	Studies included in qualitative synthesis	25

Table 2: Database summary table

S/n	Database	Number of Articles	Publication Years
1	Scopus	9	2019–2023
2	Web of Science	6	2018–2022
3	Google Scholar	3	2020–2023
	Total	17	2018–2023

Some studies were found via manual searches or reference lists, accounting for the disparity between the PRISMA total of 25 and the 18 in the database framework table.

THEORETICAL REVIEW

Food Insecurity and Migration

Food insecurity, particularly in drought-affected rural areas and among households with migration networks, increases migration by acting as a push factor due to food shortages and livelihood collapse. However, this effect varies; severe food insecurity can restrict mobility in some contexts due to resource limitations. Scholars use various migration theories, including the International Organisation for Migration's definition of a migrant, which includes individuals moving across borders or within states. However, understanding the complex causal-effect linkages between food security concerns, migratory patterns, and their effects on origin and destination regions remains limited (Castelli, 2018; Mulazzani , 2020; Cerdà, 2024).

The Push-pull framework theory, New Economics of Labor Migration (NELM), and neoclassical paradigm are influential migration theories focusing on remittance and household food security. Lee's push-pull framework examines supply and demand, origin and destination, laws, and personal perceptions, with food insecurity as a major factor (Lee & Kim, 2011). The New Economics of Labor Migration (NELM) is a migration theory by Stark (1980) that links migration decisions to remittances and family wellbeing. This theory suggests that households make decisions together for food security, influenced by joint income and risk minimization. Both absolute and relative income factors contribute to real-life migration decisions, enhancing food security in households. The neoclassical paradigm, an early migration theory, suggests income disparities drive migration between rural and urban areas. This theory is in line with the dual sector development theory of Lewis (1979) which states the urban sector gives higher wages for the labor than the rural sector. Thus, migration takes place from rural agricultural sector to urban high paying sector as long as the labor income received from the two sectors remains unequal. According to critics cited in the following studies, this is oversimplified, ignores flaws in the market, and undervalues the significance of policy (Taylor, 2010; Stark, 1980). This link is complicated by expectancy value theories and human capital (Rutten et al., 2011).

According to theories, food insecurity is the main cause of migration, despite a number of push factors from the place of origin and pull factors at the destination. Among these, the need for better access to food is the primary reason for migrants to leave their place of origin, whether they are migrating internationally or from rural to urban areas.

Unemployment and Migration

Migration helps reduce food insecurity and unemployment through remittances, offering short-term financial support, though it does not resolve deeper issues of poverty (Kruppe et al, 2007). It highlights socio-economic vulnerabilities and acts as both a response to difficulties and a means of risk management. The effects of remittances vary by context; in some cases, they support education and livelihoods, while in others, they meet urgent consumption needs (Hagen, 2008).

The International Labour Office defines the unemployed as people searching for a new job, including laborers already in a paid job, even those employees working in a paid work for extended time but not satisfied with it and thus looking for a new job, and people working in

their own business but (not employed for wage). According to Lewis (1979) model of dual sector development theory, the capitalist sector in urban area uses reproducible capital and reinvesting every profit it earns from its manufacturing activities expands further due to migration of labor from the rural area wishing to have a higher wage (Lewis, as cited in Saint et al., 2019). In the model, rural areas are largely characterized by non-capitalist agricultural activities, resulting in low employment opportunities and wages. Conversely, the capitalist sector is profit-driven, with profits increasing alongside national income, influenced by capital accumulation. This underscores the structural differences between rural and capitalist sectors in terms of employment, wages, and income generation. The Lewis (1979) dual model stresses that migration from the rural a subsistence agricultural sector to urban capitalist sector will exist for longer time while the wage differential among the two sectors unresolved.

The Harris-Todaro migration model accounts for urban unemployment in less developed countries and suggests migration can be rational if the expected income differential is positive (Harris & Todaro, 1970). However, the model assumes equilibrium, which is not always the case (Lesson, 1979; Todaro, 1969). The New Economics of Labour Migration (NELM) explores migration strategies for families and households, focusing on minimizing market imperfections and employment risks. Emigration is a significant global economic and social concern, affecting many countries, and both as advantages and disadvantages (Piore, 1978; Pisarevskaya et al., 2021).

Historical-structural approaches to migration, such as world system theory and dual labor market model, explain globalization and structural change as driving low-skilled job demand but do not address individual migration reason (Arango, 2004; Pisarevskaya et al., 2023). Some migration theories, according to critics, emphasise the role of political institutions and geopolitical shifts while portraying migrants as passive participants in the creation of capital. While Asian smallholders benefited from the green revolution, African smallholders' prospects for economic and agricultural development are questionable, according to the Smallholders theoretical model (Wiggins, 2009).

In general, the majority of migration theories state that unemployment is still among the major significant factors in determining migration. The nexus between unemployment and migration is leading to the conclusion that there is a positive correlation between the unemployment rate and migration rates.

Food Insecurity and Unemployment

The Impact of Crop Diseases on Global Food Security(ICDGFS) model stresses that food insecurity is not only about its production but it is also about its availability, access, utilization and stability addressing the nutritional value and related components (Savary & Willocquet, 2020). The model also shows the relationship between crop environment, genetics, pathogens, and human activities. It stresses that creation of high paying job opportunity and qualified personnel investment are among the strategies to tackle food insecurity problem. The unemployment existing in cities termed as the major determinant of hunger and the problem of food insecurity (Leeson, 1979).

Proactive policy measures, such as public works programs, skills development initiatives, and targeted employment schemes, are crucial to reducing issues like underemployment and unemployment (Kopein et al., 2018). Furthermore, it has been demonstrated that additional techniques for reducing poverty, such as social safety nets, microfinance programs, and conditional cash transfers, effectively increase household income and lessen vulnerability. Rural areas where 70% of the world's poor people live and work needed more attention (Babatunde and Qaim, 2010). The Improving Financial Security under Sanctions as Sustainable Development (IFSSD) component gave more attention for generation of employment access. It also addresses the challenges through the strategies such as investing in agricultural sector so as to boost its productivity. Singh et al. (1986) propose a standard farm household model (FHM) that maximizes time for the employment on-farm work, non-farm work, and leisure, considering cash income, labor utilization, and labor limitations. It states that the rural household situation must be taken under consideration while resolving the issue of food insecurity. The model also stresses other factors like labor productivity, and food nutrient availability.

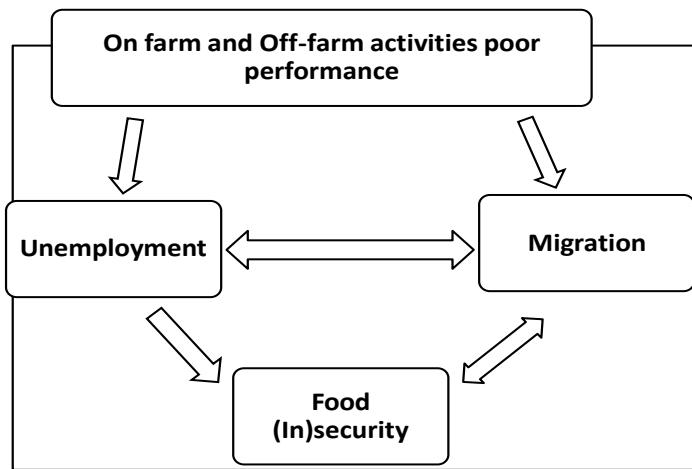
The fundamental assumptions of the major theories of food insecurity and unemployment highlight that the two are positively correlated and that a society with a high unemployment rate is more vulnerable to food insecurity.

Conceptual Framework

The study by Burchi and Muro (2012) lists five common food security approaches: Food availability, Income-based, basic needs, Entitlement, and Sustainable livelihoods. These approaches can be achieved through on-farm activities, but rural dwellers often resort to off-farm

and non-farm activities for income. This leads to unemployment and increased migration, particularly to urban (Leeson, 1979). It underlines that the three variables namely; food insecurity, migration and unemployment have bi-directional relationships. People tend to migrate when they face food security problem and the migration itself can cause food insecurity by absorbing more productive work force to other areas. Besides, old age people and children remain at place of origin by exposing themselves to food insecurity. When agricultural productivity is low because the remaining household members are not as involved in farm work, this situation occurs. Food insecurity and economic vulnerability in households are exacerbated when young migrants send little or no remittances to assist their families.

Figure 1: Framing the link between Food Insecurity, Unemployment and Migration



Source; Adapted from Burchi and Muro (2012)

EMPIRICAL REVIEW

Food Insecurity and Migration

Rural households often migrate to escape hunger, as food security and migration have direct and indirect links. Food insecurity mainly determined by climate change that forces people to migrate from rural agricultural sector to urban areas or abroad particularly in developing countries. Chronic hunger traps individuals and limits their means (Cassels et al, 2024). Other study found a positive correlation between food insecurity and migration, suggesting interventions by the government to influence migratory behavior by setting migration rules to reduce its effect and tackling food insecurity problem by strengthening productive rural agricultural investment

opportunities. On the other hand, food insecurity significantly influences international migration aspirations and preparations from Sub-Saharan Africa.

Moreover, a study by Pisarevskaya et al. (2023) on food insecurity and gender in migration decision-making found that migration decisions and preparations are mainly affected by food insecurity. In addition, the negative externalities like strong attachments to one's place and people of origin reduce migration likelihood, while positive externalities like sharing knowledge and relative deprivation encourage migration. Similarly, Obi et al. (2019) highlighted the importance of integrating the nexus between migration, and food insecurity in migration-food security literature. They found that food crises, exacerbated by climatic changes and violence, are driving international migration (Smith & Wesselbaum, 2022). Migration found to have positive influence for short and long-term food security in the form of remittances especially for female-headed households.

The study suggest that enhancing remittance routes to rural and high-migration areas can increase food security. A study in Tigray region of Ethiopia by Lemlem et al. (2022) also found that migration positively impacts household food security by facilitating the acquisition of goods, diversifying income, and funding production inputs. Mulazzani et al. (2020) also addressed the nexus between migration and food insecurity and found that food insecurity often drives migration, with migrants in Southern Africa. Furthermore, Atiglo et al. (2022) demonstrated that rural out-migrant households in the Northern Development Zone experienced improved food access compared to non-migrant households in the Middle Belt and Coastal Development Zones, highlighting the positive impact of migration on community food security in the study area. A similar research work also depicted that migration may improve food security through remittances, but their impact depends on volume and frequency (Dhakal, 2023; Owusu & Crush, 2024).

On the other hand, Michael and Maria (2019) contend that while migration can enhance food security via remittances, the actual impact relies on the socioeconomic status of households and their current food insecurity levels. Other research (Ahmad et al, 2019) also indicates that remittances can improve food security, yet their effectiveness differs based on the amount and frequency of the transfers. and Senegalese migrants in Cape Verde willing to sacrifice their own food security. A study by Cassels et el. (2024) found a negative relationship between migration

and food insecurity, emphasizing the importance of migration as a livelihood strategy through the remittance the migrants sending for their parents.

Table 3: Summary of Empirical Reviews on Food Insecurity(FI) and Migration

Authors (year of publication)	Dependent Variable	Model Used	Estimated Impact on Productivity
Michael & Dennis (2021)	Migration	Fixed effect model (FEM)	People migrate based on distribution of FI
Ahmad et al. (2019)	Migration	Three-stage regression	FI significantly influences migration
Chinedu et al. (2019)	Food Insecurity	Instrumental variable approach	Migration is crucial for both short and long-term FI
Yaw et al. (2020)	Food Insecurity	Multinomial logit	Rural out-migration may not guarantee better FI
Daniel et al. (2020)	Migration	National Panel Surveys	There is no welfare gains of internal migration
Lemlem et al. (2022)	Food Insecurity & Migration	Mixed-methods approaches	Reciprocal relationship between FI and migration
Mulazzani et al. (2020)	Migration	Case studies	FI causes the decision to migrate
Pisarevskaya. et al. (2021)	Migration	Binary-choice models	FI is an important determinant of migration
Carril et al. (2022)	Migration	Poisson-Pseudo Maximum Likelihood (PPML)	Even less severe food crises increase FIM while more severe crises skew FIM flows towards developing countries
Dhakal (2023)	Food security	qualitative data analysis techniques.	Remittances help improve the households' FI
Smith & Floro (2020)	Migration	Binary-choice models	FI is an important determinant of both migration intentions and preparations

The nexus between migration and food insecurity is bi-directional that migration may be a coping mechanism for food insecurity problem by improving households' food access and vice versa. Food insecurity significantly influences migration decision, suggesting increased coordination between international food security and migration policy agendas. Migrants are typically neither the richest nor the poorest, reflecting micro level factors. Despite the fact that food insecurity is not the sole reason of migration, there is still a significant correlation between the two. People in rural areas and developing nations, in particular, would like to have access to city amenities because of globalization and the ease with which information can be obtained. As a result, they frequently migrate not just to avoid the issue of food poverty but also to avoid the allure of wealthy nations.

Unemployment and Migration

According to a 2018 World Bank research (Region & Unit, 2022), 266 million foreign migrants left their home country in search of better job opportunities. The report showed that some

countries like the Gulf Cooperation Council countries, with South Asian migrants in facing challenges due to restrictive nationalization policies. The new restrictive policy admitting 345,000 migrants has diminished opportunities, highlighting the complex dynamics of migration in the region. Research from the developing countries suggest that unemployment and inflation impact economic growth, while migration positively affects employment through remittances (Imran et al., 2021; Bajra, 2021; Muhammad et al. 2021). Similarly, other studies also depicted that the macro-level government policies such as raising money laundering investigations and lowering remittance sending costs could improve employment opportunities through job development prospects for place of departure by the migrants (Hausman, 1978; Arbenita & Besnik, 2024).

Many empirical works reveals that Syrian refugees in Turkey have been restricted in employment due to lack of valid work permits until 2016 (Fatma & Davut, 2021; Akgündüz and Torun, 2019; Uygur, 2024). They face competition with local laborers for low-paying, labor-intensive jobs in manufacturing, construction, textile, heavy industry, and agriculture. The studies suggest a negative correlation between Syrian refugee inflow and unemployment, supplementing the existing Turkish labor force.

Besides, a study on Zimbabwe's social policy after land reform (Tekwa, 2022) found that migration increased beneficiaries' access to work, rural incomes, and food security. The study addressed that the out-migration can be reduced due to the land reform policy of the country. It implies that the imbalance in land tenure system of the country will be restored due to the land reform program and thus, the land less young people will have employment access in their own country. Thus, the new employment created negatively influences migratory trend of the society particularly among the land less young people. Family farms provide more jobs than large-scale farming operations, and rural unemployment is a significant factor influencing migration. A study by Afzali (2019) also examined the role of insecurity in driving Afghan migration, revealing that economic instability, poverty, unemployment, and insecurity are major reasons for emigration. The study suggested the government that to minimize the out-migration trend that create employment opportunities and devise policies which influences the income inequality among the citizens. Similarly, Mazher et al (2020) underlined that economic crises, unemployment, and poverty as driving factors for emigration in low and middle-income

countries (LDCS) and needs due attention by the concerned body. Economic uncertainty, including trade, production, investment, government spending, exports, and skilled labor, is a major factor.

Moreover, Mueller et al (2020) investigated on climate-induced migration and unemployment in middle-income Africa. They used census data from 4 million individuals and a fixed-effects regression model to estimate climatic effects on migration and found negative associations between precipitation anomalies, unemployment, and inactivity, suggesting that migration declines may be due to increased local demand for workers. The study also discussed how adaptation techniques impact family wellbeing. The study by Mazher et al. (2020) further found that both foreign direct investment (FDI) and migration can reduce Pakistani unemployment through foreign remittances in the long run, but their short term impact is statistically insignificant.

In addition, a study by Dhakal (2023) in Mzuzu, Malawi, also supported the previous research works that migration can support families left behind by returnee migrants through remittances, enabling them to invest in micro-enterprises, create jobs, and transfer skills (Ujkan (2021)). However, non-returnee migrants send smaller amounts of remittances, causing their families to experience food insecurity. The study suggests that the New Economics of Labor Migration (NELM) theory needs to be expanded to include the broader context of remittances' developmental impact on migrant-sending communities. A study by Huynh & Vo (2023) on the effects of migration on unemployment in 47 Asian countries from 1990 to 2020 found that migration reduces unemployment when all 47 countries are considered, but increases unemployment in low-income and low-middle-income countries. Migrant workers contribute to competition and job creation, benefiting both destination countries and themselves. The study suggests encouraging mobility across Asian nations and highlighting that higher unemployment in Asian nations correlates with higher unemployment in the current year.

Overall, the experience of developing nations showed that unemployment remains among the main reasons why people out-migrate to other areas from their original homeland. The reviewed studies depicted that there is a promising situation with out-migration from the developing countries to the western and even with the rural-urban migration itself. It can be summarized from the studies that some fortunate migrants send significant remittance to their families for

investment purpose and which intern create a good opportunity for employment creation in the place of departure. This implies that unemployment and migration have bi-directional relationship. Studies, however, also suggested that people with respectable jobs and higher-income families are moving to western nations, emphasizing that other push-and-pull variables are not very important in influencing migration decisions, especially for small children.

Table 4: Summary of Empirical Reviews on Unemployment& Migration

Authors (year of publication)	Dependent Variable	Model Used	Estimated Impact
Fatma & Davut (2021)	Unemployment	ARDL,Dynamic OLS, full modified least squares	Migration has reducing effect on unemployment often 3D jobs
Tekwa (2022)	Migration	Descriptive statistics	Unemployment is a major factor driving migration
Mazher et al. (2020)	Unemployment	ARDL model	Migration reduces unemployment
Afzali (2019)	Unemployment & Migration	Qualitative analysis	Emigration is driving force for unemployment & vice versa
Ujkan (2021)	Unemployment	Instrumentalvariables (VI)	Migration absorbs unemployment
Muhammad et al. (2021)	Employment	Fixed effect model (FEM)	Migrationhave positive impact on employment
Mueller et al. (2020).	Migration	Fixed-effects model	Negative associations between precipitation, & unemployment
Dhakal (2023)	Employment	Qualitative data analysis techniques	Returnee migrants invest in micro-enterprises, create jobs, and even transfer skills
Huynh, & Vo (2023)	Unemployment	Fixed-effects & random effects modelsgeneralized least squares & GMM)	Migration reduces unemployment

Food Insecurity and Unemployment

The study by Bajra (2021) explored the link between unemployment and food security, using data from the World Bank, United Nations Statistics, and statistical agencies of six Western Balkan countries. The research found that negative migrant flows are consistently linked to a few WB6 nations (often called the Western Balkan six referring to the six countries in the Western Balkans region that are not still members of European, EU but potential candidates of it), not due to economic expansion but due to other issues. The study found that negative migrant flows are consistently linked to a small number of WB6 countries (often referred to as the Western Balkan

six, referring to the six Western Balkan countries that are prospective members of the European Union), not because of economic growth but rather because of other issues.

Migrant workers send money home to alleviate poverty and reduce food insecurity, but as they become old, relationships deteriorate, making international migration more challenging (Ujkan 2021). Ghosh (2022) in his study about Unemployment and food security in India demonstrated that granting farmers a one-time debt waiver boosts food production and momentarily enhances their well-being. Ultimately, the study concludes that a single negative environmental shock may cause food production and farmers' well-being to decline for a considerable amount of time below their typical levels.

Other study by Onime et al. (2021) confirmed a long-term link between food insecurity, and unemployment in Nigeria. The research used secondary data from the Central Bank of Nigeria, NBS, and World Bank. It found a positive and significant relationship between unemployment and food insecurity, with a rise in the former exacerbating the latter. The study recommends a multi-sector strategy to combat poverty. The study suggests that addressing unemployment and poverty is not enough to tackle food insecurity in Nigeria. It suggests a multi-sector strategy, focusing on agriculture to create jobs and reduce unemployment. The government should expand infrastructure and improve business environment. Smed et al. (2018) also found that unemployment led to increased food expenditure and consumption of animal-based foods, indicating that addressing other economic aspects is necessary to address food insecurity.

A study found that food costs (Endris & Kassegn, 2022) decreased in the medium term due to increased consumption of animal-based foods, protein, total fat, and saturated fat. However, over time, sugar replaced these nutrients. Unemployment affects food composition, with effects varying with duration and potentially causing negative health impacts (Sinne et al. 2018). A systematic review of food insecurity and unemployment crises in sub-Saharan Africa under COVID-19 revealed severe disruptions in household livelihoods, including unemployment, working hour's loss, and food insecurity. Food insecurity increased in Kenya and Uganda by 38% and 44%, respectively, and rural Uganda's per-adult food expenditure decreased by 44%. Social protection measures, regional cooperation, a strong financial sector, and domestic borrowing can mitigate unemployment and food insecurity. A longitudinal study in Northeast

Brazil (Palmeira et al., 2020) found that family income and conditional cash transfers affected household food insecurity, with a 17.5% decrease in prevalence over time.

Table 5: Summary of Empirical Reviews on Unemployment and Food Insecurity(FI)

Authors (year of publication)	Dependent Variable	Model Used	Estimated Impact on Productivity
Ujkan (2021)	Household FI	Instrumental variables	Remittances help to reduce FI
Sinne et al. (2018)	Unemployment & Household FI	Descriptive statistics	Unemployment affects diet composition at different time
Onime et al. (2021)	Unemployment and Household FI	Johansen co-integration test and vector error correction model	Positive and significant relationship between unemployment and FI
Endris & Kassegn (2022)	Unemployment and Household FI	Descriptive statistics	Unemployment aggravate FI crises
Hernández et al. (2020)	Household FI	Generalized linear mixed-effect (GLME) models	Job loss by any household were positively associated with FI
Reeves & Tarasuk (2021)	Household FI	Multilevel regression models	Employment negatively affect FI
Palmeira et al. (2020)	Household FI	Logistic regression models	Families that did not experience an increase in their total household income were at increased risk of persistent FI across time

A study by Reeves et al. (2021) found that food insecurity was lower in nations with collective bargaining than in those with low minimum wage. Nevertheless, these correlations varied depending on the work position. In countries with generous wage setting policies, employed adults had a lower risk of food insecurity, while the risk for the unemployed remained unchanged. Hernández et al. (2022) conducted a cross-sectional analysis of 13 Latin American and Caribbean countries to investigate factors associated with food insecurity. According to the study's findings, households located in capital cities had lower rates of financial instability (FI) than households in other urban regions. In addition, Novoa et al (2024) found that capital city households have lower FI rates, attributed to unemployment and funding sources, and rural households have higher rates due to poverty, informal work, and resource scarcity. However, urban households have more access to social services. The authors suggest that government institutions in the Latin American and Caribbean should prioritize hunger mitigation efforts to improve nutritional status and prevent malnutrition.

In general, food insecurity is a problem for those without jobs, according to most study done in underdeveloped countries. Therefore, it can be concluded that unemployment is the main factor contributing to food insecurity.

CONCLUSION

This critical review explores the link between food insecurity, unemployment, and migration, focusing on articles published from 2000 to 2023. It suggests a direct link between food insecurity and migration, with climate change negatively impacting farmers' productivity and leading to migration as a coping mechanism. Unemployment increases food insecurity flows and intensify out-migration, particularly in African nations. Long-term research shows that food insecurity worsens unemployment and impacts food purchase behavior and diet composition. Remittances from migrant workers can reduce food insecurity and affect diet composition, but effects vary with unemployment duration. Information campaigns can reduce irregular migration, human trafficking, and rural youth response to awareness campaigns.

POLICY IMPLICATION

A major contributing element to rural out-migration is food insecurity, which is made worse by a lack of jobs and regional collaboration. Government action is urgently needed to teach vulnerable households and provide employment possibilities. To increase the advantages of migration, such as remittances, while lowering its hazards, particularly in agriculture, policymakers should concentrate on food security, sustainable development, and migration policies. Savings, family planning, and infrastructure investments are also essential. Techniques for mitigating food insecurity, agricultural problems, climate change and mitigation should all be included in international policies.

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