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Drivers and Distribution of Food Insecurity in Pakistan: A Meta-Analysis Approach

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ABSTRACT

Despite the significant agricultural potential, food insecurity continues to be a pressing and complex issue in Pakistan. This paper accomplishes an extensive meta-analysis of existing empirical research into the prevalence, determinants, and regional patterns of food insecurity in Pakistan. Synthesizing the evidence across household-level studies undertaken between 2010 and 2025, the analysis underscores substantial heterogeneity in the prevalence of food insecurity across provinces, socio-economic groups, and rural–urban settings. About one-third of households experience different levels of food insecurity; similarly, higher vulnerability is noted in rural areas and certain provinces, such as Sindh and Baluchistan. Some key determinants that were regularly identified include increasing household income, rising levels of education, small household size, food expenditure patterns, access to clean water, and time and regional disparities. Food insecurity is exacerbated by households' over-reliance on staple foods and limited dietary diversity, the surge in food price inflation, and exposure to economic and environmental hazards. Education, income diversification, remittances, and better resource access derived as protective factors. The meta-analysis brings to the fore that food insecurity in Pakistan is not only a challenge but is deeply grounded in socio-economic inequalities, governance challenges, and infrastructural gaps. In this respect, the findings underline the need for policy interventions that are spatially targeted, regionally responsive, and evidence-based, with focused attention paid to poverty reduction, human capital development, nutrition-sensitive programs, and sustainable agricultural practices that should be implemented toward achieving long-term food security.

Introduction

This most basic right, food, has not been enjoyed by many since the dawn of the ages of technological advancement. Boasted as the enlightened century, the 21st century is still experiencing unacceptable levels of food insecurity and hunger. The worst affected is Southern Sahara with a rating of 27.8 followed by South Asia with a GHI rating of 26.0 respectively, according to the Global Hunger Index (GHI, 2020). An astonishing 13% of the South Asians and 21% of the Africans are food insecure. The worse is, it has aggravated and even the high-income states are facing increased food insecurity since the year 2014 (World Health Organisation, 2020). The COVID 19 pandemic has also worsened this scenario, where almost a quarter of billion people are on the brink of famine (Mouloudj et al., 2020; Torero, 2020). Although debates over food insecurity had been on since the early 1930s, the World Food Conference of 1974 remained to be the central landmark at which international efforts were finally begun in the fight against hunger and malnutrition.

First and foremost, fixed prices and food availability at the national level remained the major indicators relevant to food security. However, in the 1980's FAO agreed on personal food availability as a precondition. This definition was taken further into the 1996 World Food Summit which defined food security as being the state of having at hand accessible physical and economic development, social access to sufficient amounts of safe and nutritious food. One of the main objectives that the United Nations Millennium Development Goals introduced in 2000 was to eradicate extreme poverty and hunger. The four dimensions of food security entered mainstream at the 2009 World Summit on Food Security: availability, access, utilization, and stability. All these have to converge in order to establish total food security. The major aggravating factors in this case are population growth, war, climatic change and inequality in the world economy.

According to the Food and Agriculture Organisation of the United Nations (FAO), 9.2% of the world population suffered from extreme food insecurity in 2020. These estimates were influenced by the COVID-19 pandemic and by distortions in economies (FAO, 2021). Although Pakistan has enough productive capacities to ensure that adequate essential foods are available domestically, social and economic failure seriously restricts access to nutritious food. However, such issues are not entirely its own; there are additional historical and structural issues related to ineffective distribution networks for food, poverty, and imbalanced regional growth, for instance (Hussain & Routray, 2012). Although food insecurity has increased in Pakistan over the last 20 years, there hasn't been a standardised national monitoring instrument available until recently.

There were no explicit food security goals in the 11th Five-Year Plan (2013–2018) or Vision 2025, and the National Nutrition Survey (NNS, 2011) claimed a 58% food insecurity rate, which was not determined using accepted methods. Although informative, empirical food insecurity studies at the micro level used different measures in the process, meaning that such studies have tended to have little direct relevance in terms of national food policy. Inability to unify a comprehensive framework for creating the efficient policies in the fight for food poverty, nutritional enhancement, and ensuring full access to healthy meals at moderate prices further hampers the whole process. The agrarian economy of Pakistan can simply not feed over 220 million. It absorbs near about 38% of the working force of Pakistan and contributes over 19% of GDP (Pakistan Bureau of Statistics, 2021).

Major structural inefficiencies, technology adoption gaps, and inequitable resource utilization remained major stumbling blocks in diminishing the scope of this sector to contribute meaningfully toward reducing the food insecurity issue. Therefore, availability, accessibility, utilization, and stability-food security in Pakistan is considered factors in conceptual framework of

FAO, 2017. Food insecurity is a complex, pervasive issue that poses a serious threat to sustainable development everywhere in the world. Food insecurity has been defined as the "recurring lack of access to sufficient, safe, and nutritious food." Food insecurity undercuts individual and societal well-being.

Food insecurity still remains prevalent in Pakistan despite this country having vast potential for agricultural production and is food-self-sufficient. The new research studies indicate that more than 37% households have been affected by food insecurity across regions with significant proportions continuing to stay in rural areas and vulnerable categories (Barolia et al., 2019). This meta-analysis aims to pool findings of multiple studies in order to identify prevalence, contributors, and impacts of food insecurity in Pakistan. It sets a basis for evidence-based policy interventions. Prevalence of food insecurity varies greatly across the different provinces of Pakistan. The greatest rates of food insecurity in the nation are found in Sindh and Balochistan, mostly due to their unfavorable climate and infrastructural and economic growth.

For example, the arid climate and absence of irrigation system in Balochistan makes the agricultural production low. Overpopulation and economic inequality are the other problems that Sindh is facing (PSLM Survey 2011). The poorest one-fourth of the population consists of elderly, female, and children when it comes to malnutrition and micronutrient deficiencies (Sulaiman et al. 2021). Food wastage aggravates the situation. Hospitality industries produce 694 tonnes of food wastage every year.

Only through individual studies can the strength of some components of food insecurity be determined; general patterns, gaps, and remedies need a holistic synthesis. This meta-analysis pools findings from several studies to synthesize the situation regarding food insecurity in Pakistan and its underlying factors that contribute. This research study aims to inform targeted efforts and policies by analyzing some of the factors like poverty, corruption, and regional inequalities that might lead to the reduction of food insecurity and subsequently enhance quality of life for millions of Pakistanis. Based on this background, the objective of the current research work is a meta-analysis of food insecurity in Pakistan by analyzing the previous studies' analysis. For this research, to better understand barriers in terms of adequate food availability at the family level, use has been made of already crafted case studies at local levels on food security in Pakistan.

This research aims at giving more representative knowledge on issues concerning food insecurity in Pakistan through making use of synthesizing empirically culled information from a number of case studies with the meta-analysis approach.

Meta-Analysis Methodology

Meta-analysis, a technique whose roots go deep into medical sciences, has only lately been applied in environmental and social sciences (Matarazzo and Nijkamp, 1997). It is an approach to systematically synthesizing findings from multiple independent empirical studies (van den Bergh and Button, 1997; Hough and Hall, 1994). This makes it the most appropriate technique for the attainment of the goals of this paper.

Based on the confluence of structural inefficiencies, governance challenges, and socioeconomic disparities, food insecurity has been rampant in Pakistan for ages. However, despite the country being capable of producing enough food to feed its population, issues of equitable distribution, accessibility, and affordability of nutritious food continue to fuel this crisis. Through the ages, researchers have revealed different layers of this issue and have therefore drawn great knowledge into the determinants of cause, extent, and significance of the phenomenon. It provides an outline of research over food insecurity in Pakistan and how influential works contributed with results.

Cheema and Abbas (2016) conducted the seminal study to measure food insecurity by utilizing the FGT index and PSLM data of the year 2010-11. The study revealed that the prevalence of food insecurity was at 28.63%, and the food insecurity gap and squared gap were 5.28% and 1.46%, respectively. Logistic regression determines other important factors such as education, livestock ownership, and foreign remittances as being reducing factors of food insecurity, whereas poverty and households headed by males enhance food insecurity. Regional variations did exist in the study, as acute food insecurity was observed in Sindh, and researchers aimed to force policymakers to focus their interventions on these regional variations.

Building on this foundation, Aziz et al (2016) went further to explore household-level determinants of food insecurity across provinces. They clarify that households with a large number of family members, with less education, and with only one source of income are more vulnerable to food insecurity. Their study painted a grim future for Sindh, branding it the poorest province in food insecurity terms. Aziz and associates called for focused administrative programs targeted at helping the vulnerable households and remarked that where vulnerability was persistent, it needed targeted solutions.

In 2018, Ishaq et al. undertook a time-series analysis of food insecurity in detail using data for seven rounds of the HIES from 2004 to 2016. They found fluctuating patterns of food insecurity at the national and subnational levels with peaks during crisis periods-natural causes like earthquakes and floods or man-made causes of food price increases and armed conflicts. What is highly remarkable is that the poorer expenditure quintile of the households continually showed high-level food insecurity, thus vulnerable to those economic and environmental shocks. This study revealed the cyclical pattern of food insecurity in Pakistan and called for urgent stability and resilience-building measures to safeguard vulnerable populations.

Furthering research in the socio-economic aspect of food insecurity, Parveen et al. (2022) shifted the focus of attention to vulnerability and resilience at the household level. They analyzed a series of factors such as household size, dependency on employment, and composition by gender using data from the Pakistan Standard and Living Measurement Survey for 2018–2019 and the Food Insecurity Experience Scale (FIES). Vulnerability analysis revealed that socio-economic factors have significant impacts on food insecurity levels. Parveen and others argued that investments in human capital especially through women's empowerment and bridging rural-urban disparities were important to mitigate food insecurity in sustainable ways.

Similar lines Hameed et al. (2020) analyzed socioeconomic determinants through data collected in HIES (2015-16). Their result showed that 38 percent of households suffered from calorie deficiencies; the rate was more common in rural settings at 40.5 percent than in urban at 36.7 percent. The study identified various determinants, such as household size, education, and agricultural indicators. For example, education level of the household head was protective against food insecurity; but poverty and overcrowding as measured by persons per room were very strong correlates. Female-headed households were less likely to be in food insecurity compared to the male-headed household, thus implying better resource use.

Recently in 2021, Afridi et al have given a new perspective by focusing only on Pakistan's development concerning the attainment of SDG2.1. They estimated the prevalence of undernourishment and food insecurity using HIES data from 2018-19 and compared their results with FAO benchmarks. Their results indicate that 18.38% of households were undernourished, and the situation in urban areas (23.43%) was worse than in rural areas (16.61%). The highest proportion of undernourished households was reported in Punjab (21.48%), followed by Sindh (17.40%), and the lowest was in Khyber Pakhtunkhwa at 12.67%. Thus, this research study threw

light upon the need for area-specific intervening and more accurate monitoring mechanisms to tackle undernourishment.

This discussion became more profound with research on food insecurity, like cross-sectional analysis of Kibria et al. from 2023 on households in Peshawar, both urban and rural. This study was meant to discuss the relationship that food security has with wider practice issues, such as that of water, hygiene, and sanitation. They established that any household with satisfactory practice in any of these domains would mostly be food secure. The same year, Farooq et al. (2023) directed attention towards food wastage in the hoteling industry of Pakistan. They quantified food wastage in Swat that annually reaches to the tune of 694 tons which translates to a huge economic loss amounting to Rs. 243,296,800 (USD $1,013,736). It exposed the paradox of food wastage where a country is facing rampant food insecurity and therefore needs systemic reforms that could reduce food wastage and divert excess food to people in dire need.

Further information was received from Amir et al. (2023) from their application of FIES in an attempt to identify factors that determine food insecurity. They used multi-level modeling in analyzing the data from PPHS-2010 and reported that some factors such as income, education, and owning land are protective, whereas injuries, casualties, and inflation make it worse. Ami and colleagues have proposed diversified sources of income as well as community-level interventions, which help to build resilience to such shocks.

Ahmad et al. (2023) analyzed the role of remittances in reducing food insecurity. The authors used PSLM data from 2018-19 and applied an ordered logit model to analyze how remittances affect the food security of households. Their results showed that receiving remittances made a household less likely to have severe or moderate food insecurity. This implies that external income sources are crucial for boosting food security.

As the timeline shifts towards the present period, Hameed et al. (2024) remind the readers constantly of deteriorating food security in Pakistan. Compared to this, food intake for rural areas decreased by 2% between 2015 and 2019, whereas for urban areas, it decreased by 0.8%. On the other hand, overall food insecurity increased by 2.1%. More importantly, micronutrient deficiencies aggravated the conditions in Sindh, KP, and Balochistan. Moreover, the increasing food prices reduced access to the nutritious food as well. Such findings thereby justify the critical challenge posed to provincial governments to respond to these issues, especially in rural areas, through focused policies and interventions.

Fatima (2024) reviews the secondary data gathered from journal articles, policy reports, and newspaper articles and integrates the causes and effects of food insecurity in Pakistan. The paper considers food scarcity as part of the broader issue of non-traditional security and argues that the crisis is due to climate change, resource mismanagement, recurrent flooding, political instability, and inflation. The author reports on the role of agriculture in contributing to the macroeconomic effects (≈23% of GDP, 37.4% of employment) and estimates that 4.4 million acres of crops were damaged by the flooding in 2022, with almost 1 million livestock deaths and USD 12.9 billion in damages to agriculture (≈43% of total flood damages). Prior to COVID-19, the household food insecurity rate in Pakistan was 16%, which increased to 40% during the pandemic and to 43% (acute food insecurity) in 2022, placing Pakistan among the top six food-insecure countries in the world. This study provides valuable contextual and trend information, particularly the temporal worsening of food insecurity from 16% to 40% to 43% from 2019 to 2022, and highlights the interaction of flooding, inflation, and the pandemic as a key factor in recent years.

Khetran (2023) brief on the Global Report on Food Crises (GRFC) 2023 (FSIN/GRFC) and other FAO, UNICEF, World Bank and IPC sources to situate the food crisis in Pakistan in the context of

three global drivers of acute food insecurity: conflict, economic shocks and climate extremes. The short report highlights the devastating effect of the 2022 floods on the lives of roughly 33 million people, the displacement of 7.9 million people with 589,000 in camps, and the increase in people in IPC Phase 3+ (Crisis or worse) from 25% in pre-flood analysis to 43% post-flood analysis in Pakistan. In the final quarter of 2022, about 8.6 million people in rural area of Balochistan, KP and Sindh experienced acute food insecurity with 4.4 million acres of cropland damaged and 0.8 million livestock lost. The total agricultural damage and loss was estimated at USD 13 billion (82% crops, 17% livestock), and the total flood damages were estimated at USD 14.9 billion and economic losses at USD 15.2 billion, according to the FAO. Food price inflation increased by 36% year-on-year by December 2022 and around 1.6 million children were severely wasted and 6 million children were wasted in flood affected areas. his paper provides the most recent estimates of crisis-level prevalence based on IPC and GRFC data, which triangulates the national prevalence estimates with the classifications for acute food insecurity.

Soharwardy et al. (2023) examines the National Food Security Policy 2018 and the overall legal, institutional and agricultural landscape of food security in Pakistan. The report, based on the National Nutritional Survey 2018, Global Food Security Index 2023 (Pakistan's rank was 84/113) and Global Hunger Index 2023 (Pakistan's rank was 102/125, "serious"), reveals that 36.9% of Pakistani households are food insecure, while 18.3% severely so. Malnutrition affecting children is very high (45% stunted, 10.5% wasted and 31.6% underweight) with Sindh (10.0%) and Balochistan (6.5%) being worst hit. Agriculture contributes 22.9% of GDP and 37.4% of the labour force, while livestock accounts for 60% of the value added in agriculture, however per capita water availability has decreased from 5,000 m^3 in the 1950s down to less than 1,000 m^3 and there is a wheat deficit of ≈4 million tons compared to the national needs. The report compares the situation of Pakistan with India (National Food Security Act 2013) and China, and suggests the establishment of a national food security act, increased investment in R&D, reforms in the food market, development of cold-chain infrastructure, water resource management and a national farmer credit registry. The crisis is exacerbated by population growth (2.55%; 241.49 million) and July 2023 food inflation (39.5%). The paper provides the policy context, malnutrition and macro-agricultural context for the meta-analysis, and international comparisons are provided to support the Discussion section.

Arshad, Tunio, Javed & Nabi (2024) empirically estimates the magnitude, severity and causes of food insecurity in Pakistan in 2018–19, based on HIES 2018–19 microdata (n = 24,789 households) and three complementary measures of food insecurity: gross calories, calorie adjustments for food loss, and exclusion of gifts/assistance. The headcount, gap and squared food insecurity gap were estimated using the Foster–Greer–Thorbecke (FGT) index, and correlates identified using a binary logistic regression. The unadjusted estimates reported 42.54% of households and 45.89% of the population to be food insecure, while adjusting for food loss increased these to 45.06% and 48.40%, respectively, and excluding gifts/assistance increased them to 44.03% and 47.05%, respectively. It is paradoxical that food insecurity was more prevalent in urban areas than rural areas (urban 51.56% vs rural 37.52% households) and highest in Sindh (45.51%) and KP (45.27%) and lowest in Punjab (40.10%) and Balochistan (41.70%). The food-insecurity gap was ≈21% nationally, indicating that the food-insecure population is mostly clustered near the minimum calorie threshold. Logistic regression verified that region, head gender, head education, proportion of graduates, rooms per person, ownership status, dependency ratio, consumption inequality and mean calorie intake are significant determinants. The specific paper used in this meta-analysis is the most analytical, presenting point estimates with several different measurement specifications, as well as a full correlates framework, which is congruent with Afridi et al. (2021) and different from the FAO PoU/FIES approach, where a calorie-deficit definition is applied.

This massive volume of research forms a dynamic and multidimensional picture of food insecurity in Pakistan. The literature has described major issues throughout the period: regional disparities, socio-economic vulnerabilities, and systemic inefficiencies; yet it also delineates routes toward resilience. The trend from 2016 to 2024 is that progress has coexisted with persistent gaps, pointing toward an urgent necessity for harmonized and creative approaches toward ensuring food security for all.

These studies' findings paint a complex and highly detailed picture of food insecurity in Pakistan and point toward several factors interlinked with each other, which are driving the persistence of this issue. Socioeconomic determinants come at the forefront, where poverty, low levels of education, large household sizes, and dependence on single sources of income are constantly being indicated as drivers of food insecurity. This gender dynamics also sustains such vulnerabilities because male-headed households are not as resourceful and are not as robust as those headed by females in managing resources.

Geographical and regional inequalities also come in where Sindh is frequently cited as the most susceptible province to severe food insecurity. Rural areas tend to be at a disadvantage by having less infrastructure, fewer resources, and fewer markets and are thus more prone to economic and environmental shocks. The urban centers are a little better but also facing rising costs of living and undernourishment according to recent studies.

Table 01: Meta-Analysis summary

Author and Year	Focus/Objective	Methodology/Data	Key Findings	Recommendations
Cheema and Abbas (2016)	Measure food insecurity and identify contributing factors.	FGT index and PSLM data (2010-11). Logistic regression.	28.63% food insecurity; food insecurity gap (5.28%), squared gap (1.46%). Education, livestock, and remittances reduce insecurity; poverty and male-headed households increase it. Acute insecurity in Sindh.	Regional interventions targeting Sindh and focusing on education and diversified income sources.
Aziz et al. (2016)	Explore household determinants of food insecurity across provinces.	Analysis of household-level data.	Households with larger family sizes, less education, and single incomes face greater vulnerability. Sindh identified as the poorest province in terms	Focused administrative programs to address vulnerable households; targeted solutions for persistent insecurity.

			of food insecurity.	
Ishaq et al. (2018)	Examine time-series trends of food insecurity from 2004–2016.	Analysis of seven rounds of HIES data (2004–2016).	Food insecurity fluctuates nationally and sub-nationally, peaking during crises like earthquakes, floods, and price hikes. Poorer households face consistently high vulnerability.	Stability and resilience-building measures to protect vulnerable populations against economic and environmental shocks.
Parveen et al. (2022)	Assess vulnerability and resilience in relation to food insecurity.	PSLM (2018–19) and Food Insecurity Experience Scale (FIES).	Household size, employment dependency, and gender composition significantly impact food insecurity. Socio-economic disparities exacerbate the problem.	Investments in human capital, women's empowerment, and reducing rural-urban disparities to sustainably address food insecurity.
Hameed et al. (2020)	Analyze socioeconomic determinants of food insecurity.	HIES (2015–16). Logistic regression analysis.	38% calorie deficiency nationwide, with rural areas (40.5%) worse than urban areas (36.7%). Education is protective; poverty and overcrowding worsen insecurity. Female-headed households are less food insecure.	Promote education and tackle poverty; address rural challenges and ensure efficient resource management, particularly in female-headed households.
Afridi et al. (2021)	Evaluate Pakistan's progress on SDG 2.1 targets (prevalence of undernourishment and food insecurity).	HIES (2018–19) data compared with FAO benchmarks.	18.38% undernourishment; urban areas (23.43%) worse than rural areas (16.61%). Punjab reported the highest (21.48%) and KP the lowest	Area-specific interventions and better monitoring systems to address regional disparities and undernourishment challenges.

			(12.67%) undernourishment.	
Kibria et al. (2023)	Assess the relationship between food security and broader practices like water and sanitation.	Cross-sectional analysis of households in Peshawar (urban and rural).	Households with satisfactory water, hygiene, and sanitation practices were more likely to be food secure, highlighting the role of health infrastructure.	Strengthen water, hygiene, and sanitation practices to enhance food security.
Farooq et al. (2023)	Quantify food wastage in the hoteling industry and its economic impact.	Analysis of hoteling industry in Swat.	Annual food wastage of 694 tons in Swat, equivalent to Rs. 243,296,800 (USD $1,013,736). Highlights inefficiencies in food management amidst widespread food insecurity.	Implement systemic reforms to reduce food wastage and redirect surplus food to those in need.
Amir et al. (2023)	Identify determinants of food insecurity using FIES.	Multi-level modeling with PPHS-2010 data.	Income, education, and land ownership are protective factors, while shocks (e.g., inflation, injuries) exacerbate food insecurity.	Encourage income diversification and implement community-level interventions to build resilience against shocks.
Ahmad et al. (2023)	Analyze the role of remittances in reducing food insecurity.	PSLM (2018–19) data and Ordered Logit Model.	Remittance-receiving households are less likely to experience severe or moderate food insecurity, highlighting the importance of external income sources.	Facilitate remittance flows and leverage them as a tool to enhance food security.

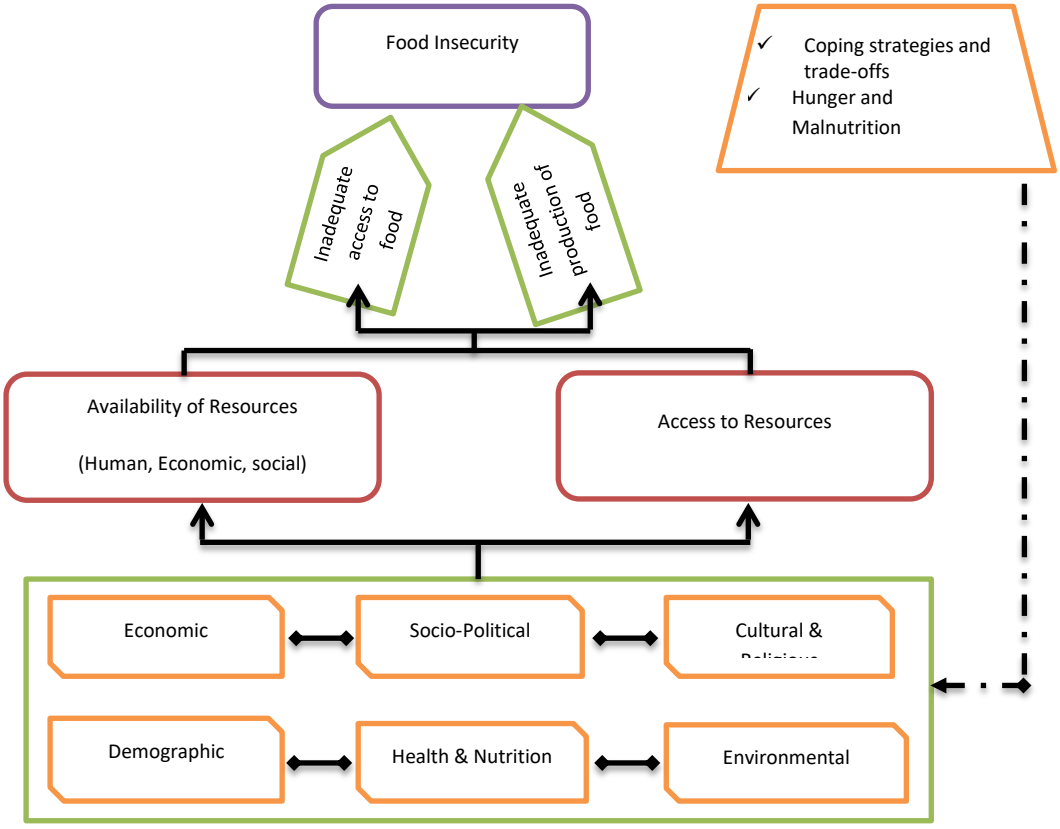
Hameed et al. (2024)	Examine recent trends in food insecurity and nutritional deficiencies.	HIES data (2015–19).	Dietary intake decreased by 2% in rural areas and 0.8% in urban areas. Overall food insecurity rose by 2.1%, with significant micronutrient deficiencies in Sindh, KP, and Balochistan. Rising food prices limited access to nutritious food.	Urgent provincial-level interventions to improve food access, tackle price inflation, and address nutritional deficiencies, particularly in rural areas.
Fatima (2024)	Causes and impacts of food insecurity and scarcity in Pakistan	Qualitative review of secondary sources (journals, reports, news)	16% pre-COVID food insecurity rose to 40% (pandemic) and 43% acute in 2022; 2022 floods destroyed 4.4M acres of crops and 1M livestock (USD 12.9B agricultural loss)	Sustainable agriculture, subsidies, food diversification, population control, and transparent governance
Khetran (2023)	Key drivers of food insecurity in Pakistan (conflict, economic shocks, climate	Policy brief based on GRFC 2023, IPC, FAO, UNICEF, World Bank	8.6M in IPC Phase 3+ in rural Sindh, Balochistan and KP; 33M affected by 2022 floods; food inflation +36% YoY; 1.6M children severely wasted	Climate-resilient agriculture, social safety nets, rural development, wheat crop planning, and international cooperation
Soharwardy et al. (2023)	Evaluate Pakistan's food security policies and propose implementation strategies	Policy analysis of NFSP 2018, NNS 2018, GFSI 2023, GHI 2023, and legal framework review	36.9% households food insecure; 45% children stunted; GHI score 26.6 (rank 102/125); wheat deficit ~4M tons; per-capita water <1,000	National food security act, R&D investment, market reforms, cold-chain, water management, and farmer credit registry

Arshad, Tunio, Javed & Nabi (2024)	Extent, depth, and correlates of food insecurity in Pakistan	HIES 2018–19	42.54% households and 45.89% population food insecure; urban > rural (51.56% vs 37.52%); Sindh highest (45.51%); correlates include region, education, dependency ratio, consumption inequality, and mean calories	Targeted subsidies to marginal households, education expansion, reduction of consumption inequality, and gender-sensitive food policies

These are compounded by natural and systemic forces. Environmental disasters, which include flooding and earthquakes, and economic shocks in terms of inflation and food prices, upset the food supply chain and access. Systemic inefficiencies like the high level of wastage in the hoteling industry further demonstrate the paradox of abundance and deprivation.

Health and sanitation infrastructure equally relevant to the solution of food insecurity. Poor access to clean water, sanitation, and hygiene practices negatively impacts household productivity and nutritional outcomes. The deficiency of micronutrients, especially in provinces such as KP, Sindh, and Balochistan, underscores the need for nutritional interventions.

Figure 01: Theoretical framework of Food Insecurity



Source: Misselhorn(2005)

Some of these protective factors include education, income diversification, land ownership, and remittances. These have proven to be a source of hope in the reduction of food insecurity because they empower households and make them more resilient to shocks. Taken collectively, the studies require that there be focused policy interventions, region-specific to concentrate on vulnerable populations much more in rural and disaster-prone areas. Human development investments through education, empowering women, and closing gaps between rural and urban communities are needed to meet the above requirements. There are also necessary system reforms on reducing food wastages, improving governance, and investment in infrastructure for equitable nutritious food for all.

The theoretical frameworks for analyzing food insecurity are the processes responsible for it and its impacts on individuals and livelihoods. Generally, there are five broad categories of drivers that contribute to food insecurity, namely; economic, socio-political, health and nutrition, cultural and religious, environmental, and demographic factors. Its action could either be in the short term (acute) or long term (chronic) and in some cases, it may directly act or indirectly by causing another driver.

Food insecurity mainly results from disrupted access to food or decreased capability of generating food resources. Other key impacts of food insecurity to the household and individual include hunger and malnutrition besides changed livelihood strategies. All these may feedback to amplify or maintain food insecurity.

Conclusion

Food insecurity in Pakistan is multifaceted and has emerged from a host of interrelated socioeconomic, cultural, and governmental variables. In the light of this meta-analysis, it clearly reveals that this phenomenon has remained very common, especially for disadvantage groups and rural regions, thus requiring collective actions. Major causes include climate change, gender inequality, corruption, unemployment, inflation, and poverty. This demand requires a wholistic policy encompassing all of the above: infrastructure development, a program for the poor, and poverty reduction. Pakistan would begin its strides toward food security by its people with the establishment of evidence-based policies that invest in social safety nets along with sustainable agriculture and good governance. Second, measures from the economic domain, ranging from job generation and vocation training to diversified income generation in rural and disadvantaged regions, can mitigate food insecurity to a great extent.

Governance can be constructed through combating corruption and specific plans for regions, and dietary behavior can be enhanced with nutrition-driven initiatives such as accessible nutrient supplements as well as an education campaign. Infrastructure development will likely improve access to food through transport, water, and sanitation. This synthesis will provide an overall source of information for researchers, politicians, and other development practitioners who have interest in food insecurity in Pakistan.

Key policy recommendations

The immediate support that vulnerable households might require can be sourced from strengthened and expanded social safety nets like food subsidies and conditional cash transfers. Invest in R&D for agriculture and push more aggressively to adopt conservation agriculture combined with irrigation upgrading. Farm diversity lowers dependence on staple crops, and therefore, it helps better cushion the impact of market or climate change shocks. Improved political influence by marginalized people through reducing income inequality reduces food insecurity. Improved governance and reduced corruption will ensure the proper allocation of resources, making public

programs more effective. Food safety and quality would prevent foodborne illnesses and maintain an equilibrated diet, whichever the case may be; Pakistan can strive toward universal food security using evidence-based policy if those issues are resolved.

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