EXAMINING THE FACTORS INFLUENCING MALNUTRITION AMONG CHILDREN AGED ZERO TO FIVE YEARS IN TANZANIA -A CASE OF ITIGI DISTRICT.

Justin Boniface Mwanyelo
Department of Economics
Institute of Accountancy Arusha
jumwab@yahoo.com

&

Dr. Grace Idinga
Department of Economics
Institute of Accountancy Arusha
idingag@gmail.com

Abstract
This study examines the factors influencing malnutrition among children aged zero to five years in Itigi District, Tanzania. The main issue is the high prevalence of malnutrition in this area. The specific objectives include identifying economic, social, and cultural factors that contribute to this problem. A descriptive research design was used for this study. Both purposive sampling and cluster random sampling techniques were employed to collect data from 400 respondents, including household heads and healthcare professionals. Structured questionnaires and in-depth interviews were used for data collection. The data were analyzed using quantitative and qualitative methods. Key findings reveal that 32% of children are stunted, 12% are wasted, and 15% are underweight. Economic factors, such as low household income and high food prices, are significant contributors to malnutrition. Maternal education plays a crucial role in improving child nutrition. The study concludes that a multi-faceted approach is necessary to address malnutrition effectively. Recommendations include implementing economic support programs and enhancing maternal education.

Keywords: *malnutrition, child nutrition, maternal education, economic factors, Itigi District.*

1.0 INTRODUCTION

Malnutrition remains a critical public health issue globally, particularly among children under five, who are the most vulnerable. According to the United Nations International Children's Emergency Fund (UNICEF, 2021), over 45% of child deaths are attributed to malnutrition, with approximately 149 million children being

stunted, 45 million wasted, and 38 million categorized as overweight. The World Health Organization (WHO, 2020) highlights that regions such as South Asia and Sub-Saharan Africa bear the brunt of this crisis. This underscores the need for continued global efforts to address both immediate and underlying causes of malnutrition.

In Sub-Saharan Africa, the problem is pervasive. The African Union (2017) reported that more than one-third of children under five are stunted, a significant indicator of chronic malnutrition. Further, the World Bank (2019) estimates that while the region accounts for only 14% of the global population, it harbors nearly 39% of the world's malnourished children. Although regional initiatives such as the Comprehensive Africa Agriculture Development Programme (CAADP) and the African Union's Malabo Declaration aim to enhance agricultural productivity and nutrition, persistent challenges, including poverty and climate change, have hindered progress (Adeyeye et al., 2023).

East Africa is notably affected, with an estimated 33% of children experiencing malnutrition-related diseases such as kwashiorkor, marasmus, and rickets (Lokuruka, 2020). Despite efforts from the East African Community's Regional Nutrition Strategy (2015-2030), countries like Tanzania, Kenya, and Uganda continue to struggle with the problem due to food insecurity and health service challenges. This highlights the gap in understanding the localized factors driving malnutrition, often leading to ineffective policies (Tesema et al., 2021).

In Tanzania, the Ministry of Health and Social Welfare (2022) reports that 32% of children under five are stunted, 14% are underweight, and 4.5% are wasted, with rural areas experiencing more severe cases. Cultural practices, such as early weaning and reliance on nutrient-poor staples, exacerbate the issue, while maternal education levels also significantly impact nutritional outcomes (Corradini et al., 2020). Poverty remains a fundamental barrier to accessing adequate nutrition.

Specifically in Itigi District, World Vision (2018) found that local beliefs, ignorance, and reliance on traditional healers significantly contribute to malnutrition rates. Economic factors, such as family income and food availability, intersect with social and cultural factors to perpetuate poor nutritional choices (Mtoi & Nyaruhucha, 2023). Despite several policies, such as the National Nutrition Strategy (2016-2021), aiming to curb malnutrition, gaps remain, particularly at the district level. Other strategies, including the Tanzania Food and Nutrition Centre (TFNC) and the Scaling Up Nutrition (SUN) Movement, have also aimed to address the issue, but challenges persist, particularly in rural areas (URT, 2020).

This study aims to fill the research gap by exploring the social, economic, and cultural factors influencing malnutrition among children aged zero to five in Itigi District. By focusing on localized drivers of malnutrition, the findings will contribute to more effective interventions and informed policymaking, potentially improving child health outcomes in the region.

2.0 LITERATURE REVIEW

2.1. Theoretical Literature Reviews

2.1.1. Food Security Theory

Food Security Theory, introduced by the United Nations Food and Agriculture Organization (FAO) during the World Food Conference in 1974, serves as a foundational framework for understanding the intricate relationships among food access, availability, and utilization. According to Olumide (2024), the theory emphasizes that these components collectively influence nutritional outcomes, particularly concerning child malnutrition in low- and middle-income contexts. It posits that food security transcends mere food availability, necessitating that households possess sufficient physical, social, and economic access to nutritious food vital for an active and healthy life.

Economic factors are pivotal in shaping food security and, consequently, child malnutrition. Families with higher income levels generally have better access to a wider variety of nutritious options, which is essential for fulfilling children's dietary needs. In contrast, economic challenges—such as low income, high food prices, and limited agricultural productivity—directly hinder a household's ability to secure adequate nutrition. This issue is particularly pronounced in larger families, where resource allocation may be stretched thin, resulting in poorer nutritional outcomes for children.

Despite its comprehensive approach, Food Security Theory exhibits notable limitations, particularly in its consideration of cultural factors. As Hossain et al. (2020) assert, cultural influences, including food taboos and traditional dietary practices, significantly impact food choices and nutritional practices. These cultural dimensions can exacerbate malnutrition, even when economic conditions may appear favorable. To complement this perspective, Nutrient Deficiency Theory focuses on the adequacy of specific nutrients in diets, independent of cultural influences. By ensuring the consumption of essential vitamins and minerals, this theory addresses gaps in nutrition that may persist due to cultural practices.

In this study, which concentrates on the impact of economic factors on child malnutrition, Food Security Theory serves as a critical lens for understanding how economic disparities manifest in nutritional inequalities. The theory’s emphasis on the interconnectedness of food availability and access underscores the necessity for policies that enhance economic opportunities for families, ensuring that all children receive the essential nutrition required for healthy development. By integrating insights from both Food Security Theory and Nutrient Deficiency Theory, this research aims to explore the multifaceted dimensions of malnutrition, accounting for both economic constraints and nutritional adequacy within the Itigi District, Tanzania. This holistic approach is vital for formulating effective interventions that address the root causes of malnutrition among vulnerable children.

2.2. Empirical Literature Reviews

2.2.1 Empirical Literature Review

Impact of Economic Factors on Child Malnutrition

The impact of economic factors on child malnutrition is a critical area of investigation, particularly in low- and middle-income

countries like Tanzania. Chet et al. (2024) conducted a study using cross-sectional data from the 2015–2016 Tanzania Demographic and Health Survey, which involved 2,867 mother-child pairs. They identified a prevalence of the double burden of malnutrition (DBM) at 5.6%, with dietary diversity playing a significant moderating role in household economic inequalities. Notably, households not achieving minimum dietary diversity exhibited an increase in DBM prevalence with wealth, while the relationship weakened among those who did achieve it. However, the cross-sectional nature of this study limits causal inferences, underscoring the need for longitudinal research to better understand these dynamics.

Similarly, Büttner et al. (2023) analyzed data from 239 Demographic and Health Surveys spanning from 1990 to 2021, encompassing over 1.1 million children across 58 countries. Their findings indicated an ambiguous relationship between economic growth and childhood malnutrition, despite identifying significant associations between malnutrition and factors such as household wealth and access to resources. This study emphasizes the necessity of examining more recent data and specific pathways through which economic growth influences malnutrition, aiming to clarify the complex interactions at play.

Ibrahim et al. (2024) further illustrated these economic influences by exploring the determinants of undernutrition among toddlers in Indonesia. Their research found that 70% of malnourished toddlers came from impoverished households, and a significant correlation existed between family economic status and malnutrition ($p=0.003$). Moreover, 54% of caregivers demonstrated inadequate nutritional knowledge, establishing a link between maternal education and child malnutrition. This research emphasizes the need for targeted interventions that address both economic barriers and caregiver education to enhance nutritional outcomes.

Ahmad et al. (2020) focused on the Multan district in Pakistan, utilizing data from 2,497 children to explore the effects of socioeconomic factors on malnutrition. The study revealed high prevalence rates of stunting (18.58%), wasting (28.43%), and underweight (19.54%), particularly in rural areas. Significant correlations were noted between malnutrition and factors such as family size, maternal education, and access to sanitation. While these findings offer crucial insights, the study's conclusions are tempered by confidence interval variability, indicating a need for further refinement in data collection and analysis.

Agostoni (2023) examined the relationship between economic growth and childhood malnutrition across low- and middle-income countries. Despite identifying significant associations between malnutrition and contributing factors, the study found unclear connections between economic growth and malnutrition prevalence. This presents an opportunity for further research to unpack these relationships and offer clearer guidance for interventions aimed at improving childhood nutrition in the context of economic growth.

Lastly, Obasohan et al. (2024) analyzed malnutrition prevalence among children aged 6–59 months in Nigeria. Their findings indicated that 43.6% of children were poorly nourished, with maternal education, child

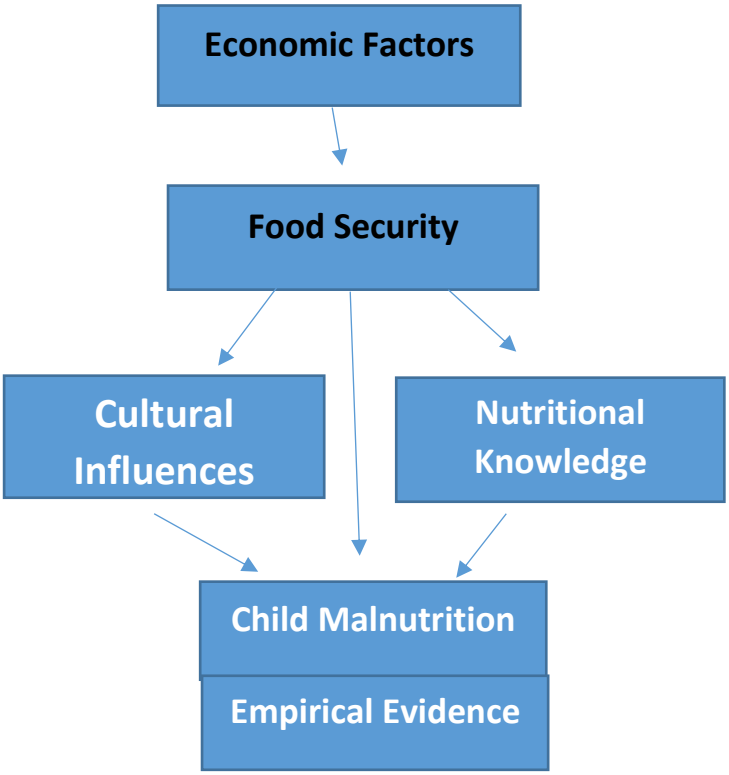
gender, and regional variations emerging as significant predictors. However, the reliance on cross-sectional data limits the understanding of causal relationships. Future studies could benefit from incorporating longitudinal data to capture the dynamics of malnutrition over time.

In summary, these studies collectively highlight the complex interplay between economic factors and child malnutrition, revealing the necessity for nuanced approaches that consider both economic status and educational barriers. Addressing these interconnected issues is essential for effectively tackling malnutrition among children in Itigi District, Tanzania.

2.3 Conceptual Framework

The conceptual framework illustrates the intricate relationships between economic factors, food security, nutritional knowledge, cultural influences, and child malnutrition. It posits that economic factors significantly determine food security, with families possessing higher income levels being better positioned to access a diverse range of nutritional outcomes for vulnerable children. nutritious foods, thereby enhancing their overall food security status. This improved food security is directly linked to child malnutrition, as better access to nutritious food reduces the prevalence of malnutrition among children. Additionally, nutritional knowledge among caregivers is crucial for understanding dietary needs and making informed food choices; higher levels of knowledge correlate with healthier feeding practices, positively influencing child nutrition. Moreover, cultural factors play a significant role in impacting both food security and nutritional knowledge. Cultural beliefs and practices can limit access to certain foods and shape caregivers' understanding of proper nutrition, leading to potential malnutrition even when economic conditions are favorable. Overall, this framework emphasizes the necessity of addressing economic, educational, and cultural dimensions simultaneously to effectively combat child malnutrition in Itigi District of Tanzania. It serves as a guide for future interventions and policy formulation aimed at improving

Table 2.3. The conceptual framework for factors influencing child malnutrition



Source: ***Author 2024***

3. Methodology

This study employed a comprehensive methodology to investigate the effect of economic factors on child malnutrition in Itigi District, Tanzania. A descriptive research design was selected for this investigation, enabling a systematic and accurate description of the population and the phenomenon of child malnutrition. This design facilitates the identification of relationships among variables, allowing for an in-depth exploration of the multifactorial causes of child malnutrition.

To ensure a representative sample, a stratified random sampling technique was utilized. This approach involved dividing the population into distinct geographical areas, specifically the 13 wards in Itigi District. Each ward served as a stratum, allowing for random selection of respondents within each area. This technique enhanced the representativeness of the sample and ensured diverse community perspectives were included.

The total sample size for the study was determined to be 400 respondents, which included 370 general informants—household heads surveyed through structured questionnaires—and 30 key informants, consisting of healthcare professionals. The sample size was calculated based on the total population size and the desired margin of error, confirming that 400 respondents would provide reliable results. This careful determination of sample size ensures that the study's findings can be generalized to the broader population of Itigi District.

Data collection involved the use of surveys and in-depth interviews. Structured

questionnaires were developed to gather quantitative data from respondents, incorporating both closed-ended and open-ended questions to capture a comprehensive understanding of the economic factors influencing child malnutrition. To facilitate understanding, the questionnaires were translated into Kiswahili, the local language. Additionally, semi-structured interviews were conducted with key informants to allow for deeper exploration of the issues surrounding child malnutrition. This qualitative approach encouraged participants to share their experiences and insights freely, thus enriching the data collected through surveys.

The analytical approach for data interpretation employed both quantitative and qualitative techniques. Quantitative data from the questionnaires were analyzed using the Statistical Package for Social Sciences (SPSS) software, where descriptive statistics summarized sample characteristics. Correlation and regression analyses assessed the relationships between economic factors and malnutrition rates, focusing on how specific economic variables impacted the prevalence of child malnutrition. For qualitative data, thematic analysis was used, which involved coding responses to identify common themes and patterns. This mixed analytical approach provided a comprehensive understanding of the multifaceted issues associated with economic factors and child malnutrition in Itigi District.

4. Findings

The findings of this study provide crucial insights into the various economic factors that influence child malnutrition in Itigi District. The data collected through structured questionnaires and in-depth interviews were analyzed using both quantitative and qualitative approaches, offering a comprehensive understanding of the relationship between economic disparities and nutritional outcomes among children aged zero to five years. The key findings are organized as follows:

4.1 Malnutrition Rates

The survey revealed alarming rates of malnutrition among children in Itigi District.

Table 4. 1 summarizes the prevalence of different forms of malnutrition:

Type of Malnutrition
Stunting (chronic malnutrition)
Wasting (acute malnutrition)
Underweight

These figures align closely with national trends, confirming that malnutrition remains a critical public health challenge in the region. Notably, the prevalence was higher in rural wards, where food insecurity and limited access to healthcare are more pronounced.

4.2 Household Economic Factors

The analysis of household economic data revealed a strong correlation between family income and malnutrition. Over 68% of malnourished children came from low-income households, where monthly incomes were below the national poverty line. Families in this income bracket were

significantly more likely to report food insecurity. One respondent noted, "*We often struggle to buy enough food, and the little we can afford is rarely nutritious.*"

Table 4.2 illustrates the relationship between income levels and food security:

Income Level	Percentage of Malnourished Children (%)
Low Income (< National Poverty Line)	*68%*
Middle Income (At National Poverty Line)	*25%*
High Income (Above National Poverty Line)	*7%*

Additionally, 57% of respondents cited high food prices as a major obstacle to ensuring proper nutrition for their children. This economic strain was particularly evident in larger households, where limited income had to be spread across multiple family members, resulting in poorer nutritional outcomes for children.

4.3 Access to Healthcare

Limited access to healthcare services emerged as a significant barrier to addressing malnutrition. Approximately 64% of respondents reported difficulties accessing healthcare facilities, with distance and transportation costs being major constraints. One participant shared, "*The health center is too far, and we often don't have the money for transport when our children fall ill.*"

4.4 Maternal Education

The study found a strong positive association between maternal education and child nutritional status. Children whose mothers had secondary education or higher were significantly less likely to be malnourished.

Table 4.4 summarizes the prevalence of malnutrition based on maternal education levels:

Maternal Education Level	*Prevalence of Malnutrition (%)*
No Formal Education	45%
Primary Education	25%
Secondary Education or Higher	10%

Notably, the prevalence of malnutrition among children whose mothers had no formal education was alarmingly high at 45%. In contrast, only 10% of children whose mothers had secondary education or higher were malnourished. This stark contrast highlights the essential role of maternal education in promoting better health and nutrition practices. One mother encapsulated this sentiment by stating, *"I learned in school how to feed my children properly, and I make sure they eat a variety of foods."* This insight reflects how educational attainment empowers mothers to make informed dietary choices, resulting in significantly improved nutritional outcomes for their children.

4.5 Cultural Practices

Cultural factors also played a significant role in influencing malnutrition rates. The findings revealed that 31% of respondents adhered to traditional feeding practices, such as early weaning and reliance on nutrient-poor staple foods. Households headed by older family members often relied on indigenous knowledge rather than modern healthcare advice, which contributed to misconceptions about nutrition. For instance, participants noted that *"we wean our children early because it's what our parents taught us,"* highlighting the reliance on indigenous knowledge passed down through generations.

Furthermore, households led by older family members often prioritized traditional dietary customs over modern healthcare advice, leading to misconceptions about proper nutrition. As one respondent expressed, *"We believe that feeding our children more starches will keep them healthy,*" indicating a prevailing misunderstanding of nutritional needs. This reliance on traditional knowledge can perpetuate harmful feeding practices that contribute to malnutrition.

4.6 Agricultural Productivity

The study found a direct link between agricultural productivity and food security. Households engaged in small-scale farming were more likely to experience food shortages, especially during the lean season. Approximately 70% of households reported relying on subsistence farming. A local farmer expressed, "*We struggle with our crops every year, and when there's little to harvest, my children suffer the most*."

4.7 Government Programs

Despite the presence of government programs aimed at reducing malnutrition, such as the National Nutrition Strategy (2016-2021), the study found limited reach in Itigi District. Only 22% of households reported benefiting from government-sponsored nutritional programs, while 18% had received food aid or supplementary feeding services from NGOs.

4.8 Statistical Analysis

The multivariate regression analysis confirmed that economic factors, including household income and maternal education, were the most significant predictors of child malnutrition.

Table 4.8 presents the regression analysis results:

Variable	Coefficient	p-value
Household Income	-0.18	< 0.05
Maternal Education Level	-0.25	< 0.01
Access to Healthcare Services	-0.12	< 0.10

The results demonstrated that for every Tanzanian shilling increase in household income, the likelihood of a child being malnourished decreased by 18%. Similarly, higher maternal education levels were

associated with a 25% reduction in the probability of child malnutrition.

5. Discussion

This study provides valuable insights into the complex causes of child malnutrition in Itigi District, highlighting economic, social, and cultural factors. The prevalence of malnutrition in the district reflects broader trends observed in rural areas of Tanzania, emphasizing the urgent need for targeted public health interventions to address the multifaceted drivers of malnutrition (Ministry of Health and Social Welfare, 2022).

Economic factors emerged as primary determinants of child malnutrition, with a clear correlation between low household income and nutritional outcomes. Previous research has demonstrated similar patterns in other contexts, with Ibrahim et al. (2024) reporting that a significant percentage of malnourished children in Indonesia came from impoverished households. Ahmad et al. (2020) also found that low income and larger family sizes contribute to higher rates of stunting and wasting. This study confirms that families facing economic hardship are significantly more likely to struggle with food insecurity, reinforcing the need for economic support initiatives, such as income-generating activities and food subsidies, to enhance nutritional outcomes.

High food prices were identified as a significant barrier to accessing nutritious food. This finding aligns with Chet et al. (2024), who noted that wealth inequalities influence dietary diversity and malnutrition. Addressing food price volatility and improving access to affordable, nutrient-dense foods is essential for mitigating malnutrition at the household level.

The strong association between maternal education and child nutritional status is another critical finding. Children with more educated mothers are less likely to be malnourished, reflecting the importance of maternal knowledge in promoting healthy feeding practices and seeking appropriate healthcare. This aligns with findings from Obasohan et al. (2024), who reported that maternal education significantly affects child nutritional status in Nigeria. Similarly, Büttner et al. (2023) observed that mothers with higher education levels are more likely to understand and implement effective nutritional strategies. Public health interventions should prioritize educational initiatives targeting mothers and caregivers, focusing on nutrition, childcare, and the importance of timely healthcare interventions.

Access to healthcare services emerged as a significant challenge, with many respondents facing difficulties in reaching facilities. This mirrors findings from Tesema et al. (2021), who noted that poor healthcare infrastructure and accessibility issues often delay the detection and treatment of malnutrition in rural areas. Additionally, the limited availability of nutritional education programs exacerbates the problem, as caregivers lack essential knowledge for effective dietary practices. Enhancing healthcare access, potentially through mobile health services or decentralized systems, could bring necessary resources closer to communities, while expanding nutritional education initiatives

would empower caregivers to improve their children's dietary habits.

Cultural beliefs and traditional feeding practices significantly impact malnutrition rates in the district. Many families adhere to practices such as early weaning and reliance on nutrient-poor staples, which contribute to poor nutritional outcomes. Research by Hossain et al. (2020) indicates that cultural norms can sometimes overshadow economic factors, perpetuating malnutrition even when food resources are available. Therefore, public health interventions must incorporate culturally sensitive nutrition education that respects local traditions while promoting healthier feeding practices. Collaborating with community leaders and traditional healers could facilitate a shift away from harmful practices and improve child nutrition.

The study highlights the critical connection between agricultural productivity and food security. Households dependent on small-scale farming often experience food shortages due to poor harvests and outdated techniques. Lokuruka (2020) emphasized that food insecurity is a significant driver of malnutrition in East Africa. Improving agricultural productivity through modern techniques, better access to inputs, and climate-resilient crops could enhance food availability and, in turn, reduce malnutrition rates.

Despite existing government initiatives aimed at reducing malnutrition, the limited reach of these programs points to significant gaps in implementation, especially in rural areas. Adeyeye et al. (2023) noted that many nutrition-related programs in Sub-Saharan Africa fail to adequately address the needs of the most vulnerable populations. Strengthening the execution of government and non-governmental interventions is essential for improving child nutrition. Expanding the reach of programs and ensuring that interventions are tailored to the specific needs of rural communities will enhance their effectiveness. Furthermore, improving coordination between governmental bodies and NGOs could lead to more comprehensive efforts to combat malnutrition.

6. Conclusions & Recommendations

This study aimed to investigate the factors influencing malnutrition among children aged zero to five years in Itigi District, Tanzania. The findings highlight that addressing child malnutrition in this region requires a comprehensive understanding of the interplay between economic, educational, and healthcare-related factors. The significant role of low household income and high food prices in contributing to malnutrition underscores the urgent need for targeted economic interventions. Additionally, the findings indicate that enhancing maternal education can be instrumental in improving child nutrition. It is evident that public health strategies must not only focus on economic and educational enhancements but also consider cultural practices and healthcare access to develop effective interventions. Overall, the study emphasizes the importance of a multifaceted approach to combat malnutrition, paving the way for future research to explore these

dynamics further and inform policy development.

To effectively address malnutrition in Itigi District, stakeholders—including policymakers, healthcare providers, and community leaders—should implement practical strategies such as establishing targeted economic support programs that provide food subsidies and create income-generating opportunities for low-income households. Enhancing maternal education initiatives focused on nutrition, childcare, and healthcare-seeking behaviors through community workshops is essential for empowering mothers. Improving healthcare access in rural areas is critical; government and health organizations must invest in mobile health clinics and expand nutritional education services. Interventions should also be culturally sensitive, involving local practices by collaborating with community leaders and traditional healers to promote healthier feeding habits. Additionally, supporting agricultural development by offering training in modern farming techniques and access to necessary resources can enhance food security and nutritional outcomes. Finally, robust monitoring and evaluation frameworks should be established to assess program effectiveness and adapt to community needs, while fostering collaboration among government agencies, NGOs, and community organizations to optimize resource allocation and create comprehensive strategies to combat malnutrition effectively.

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