OpenMind Journal of Humanities, Arts and Creative Studies
Vol. 1, Issue – 1, (Nov-Dec) 2025

**Original Research**

**Article DOI**
--

**Article History**
Received: 28 Nov 2025
Accepted: 14 Dec 2025
Published: 17 Dec 2025

# WILL EARTH BE HUNGRY? CULTURAL AND ETHICAL REFLECTIONS ON POPULATION GROWTH AND FOOD SCARCITY

**Edinoh Kingsley, PhD [1,*], Ruth Asemota, PhD [2], and Odili Chizoba Abigail,PhD [3]**

**Correspondence Author:** Edinoh Kingsley, PhD

1. Social Studies / Civic Education Unit, Test Development Department, National Examinations Council (NECO) Headquaters,Minna, Niger State, Nigeria
2. Department of Guidance and Counselling, Faculty of Education, University of Abuja, Nigeria
3. Institute of Education, University of Abuja.

***Related declarations are provided in the final section of this article.*

## Abstract

This empirical study investigated the relationship between population growth and food scarcity with specific attention to how cultural norms, ethical values, and consumption patterns contribute to and mitigate emerging food challenges. Using survey, data was collected from 412 respondents across urban and rural communities. The study examined public perceptions of food scarcity, cultural beliefs driving family size preferences, and moral attitudes toward resource distribution. Results indicated that population growth is widely perceived as a major contributor to food insecurity. However, deep-rooted cultural norms such as preferences for large families, expectations surrounding masculinity, lineage preservation, and religious obligations significantly shaped reproductive decisions. Ethical concerns also emerged regarding unequal food distribution, global inequality, excessive consumer waste, and the dominance of profit-oriented food systems. The findings suggested that addressing future food scarcity requires more than expanding agricultural output. It demands cultural re-orientation, ethical responsibility, and structural reforms in global food governance. The study recommends integrating ethical education into sustainability initiatives, promoting culturally sensitive family-planning programmed, and strengthening international commitments toward equitable food access to ensure a more resilient and global food future.

**Keywords:** Population Growth, Food Scarcity, Cultural Norms, Ethical Responsibility, Food Security.

## Introduction

The rapid rise in population of Low and Middle Income Countries (LMIC) continues to mount pressure on food systems, intensifying concerns about the Earth's ability to sustainably feed future

generations. While domina0nt scientific debates often focused on agricultural productivity, climate change, and technological advancement, cultural and ethical dimensions are increasingly recognized as influential forces shaping food security outcomes. Will the Earth become "hungry" as its population continues to grow? This question has echoed through centuries of academic debate, shaping global conversations about human survival, environmental sustainability, and moral responsibility. Today, the question feels more urgent than ever. The world's population surpassed 8 billion people in 2022 and is projected to reach 9.7 billion by 2050 (United Nations, 2022). With more mouths to feed, pressures on global food systems intensify, raising fears of scarcity, rising food prices, nutritional inequality, and even conflict over dwindling natural resources.

Concerns about the balance between population growth and food supply are not new. Classical scholars such as Malthus (1798) warned that while population grows exponentially, food production increases only slowly, eventually leading to widespread famine and human suffering. Yet, history has also shown that human ingenuity can shift this trajectory. Boserup (1981) argued that population pressure can stimulate innovation, leading to advances in agricultural technology capable of boosting productivity. Indeed, modern achievements such as improved crop varieties, irrigation systems, and mechanized farming have helped the world avoid the catastrophic shortages Malthus predicted.

Despite these successes, new realities complicate the optimistic view. Contemporary challenges such as climate change, desertification, degraded soils, flooding, and rising water scarcity threaten to destabilize food systems worldwide (FAO, 2023). At the same time, food production is increasingly shaped by global inequities, power imbalances, and profit-driven supply chains that leave vulnerable populations behind. These conditions suggest that the question is not merely whether the Earth *can* produce enough food, but whether food is produced and distributed *equitably*.

Beyond environmental and technological constraints, cultural and ethical factors profoundly shape the dynamics of food security. Cultural values influence reproductive choices, family size, land-use patterns, and dietary habits (Oluwatoyin & Ahmed, 2019). For example, in many societies, large families are associated with social prestige, economic security, or religious expectations-values that persist even amid resource shortages. Ethical considerations also play a central role: decisions about how food is shared, the moral responsibility to reduce waste, and the willingness of wealthier nations to support food-insecure regions all reflect deeper moral commitments (Singer, 2011).

Understanding food scarcity therefore requires more than agricultural statistics; it requires recognition of how human beliefs, values, and moral choices intersect with biological and economic realities. Population growth alone does not determine hunger; cultural norms and ethical actions either deepen or alleviate its impact.

Against this backdrop, the present study investigates the relationship between population growth and food scarcity, paying particular attention to the cultural and ethical dimensions that shape public perceptions and real-world outcomes. Drawing on data from a mixed-method survey of 412 respondents, the paper explores how individuals understand the population - food nexus, how

cultural norms influence decisions around family size and food consumption, and how ethical attitudes shape opinions on fairness in food distribution and the moral responsibility to reduce waste. This multidimensional perspective provides a richer understanding of what it truly means when we ask: *Will the Earth be hungry?*

## Literature Review

### Population Growth and Food Supply

Discussions on whether the Earth can continue to nourish its expanding population draw heavily from long-standing scholarly debates. The literature often begins with Malthus (1798), who famously warned that population growth follows a geometric pattern while food production grows only arithmetically. His prediction painted a grim picture of inevitable shortages, famine, and human suffering. Although many of his assumptions have been critiqued, the core idea that unchecked population growth exerts pressure on food systems continues to influence modern scholarship.

In contrast, Boserup (1981) offered a more optimistic view, arguing that human beings are not passive victims of demographic pressure. Instead, as population increased, societies often innovate developing new agricultural technologies, improving farming methods, and expanding productivity. This viewpoint has been reflected in the Green Revolution and other technological advances that have helped many societies overcome food deficits.

However, recent global trends complicate Boserup's optimism. Contemporary research indicates that technological growth alone may no longer keep pace with the combined effects of climate change, declining soil quality, shrinking arable land, and worsening water scarcity (FAO, 2023; Godfray et al., 2018). These emerging constraints suggest that the Earth's capacity to feed future populations depends not only on innovation but on sustainable natural resource management, equitable distribution, and responsible human behavior. Thus, the demographic–food security debate continues to evolve, drawing from both classical theories and modern environmental realities.

### Cultural Influences on Family Size and Consumption

Culture plays a powerful role in shaping how communities think about reproduction, family size, and consumption. In many societies particularly across Africa and Asia, large families are not simply a demographic outcome but a cultural aspiration. Caldwell and Caldwell (2003) observe that beliefs about lineage preservation, household labor needs, economic security, and social status often underpin preferences for having many children. These cultural norms can persist even in contexts where economic hardship would ordinarily encourage smaller families.

Cultural influences extend far beyond reproductive choices. Food consumption patterns including dietary preferences, ceremonial meals, and social meanings attached to certain foods significantly shape resource demand. Garnett (2014) notes that preferences for meat-heavy diets, rising globally as incomes increase, place enormous pressure on land, water, and energy resources. These

consumption patterns often reflect cultural identity and social aspiration, making them difficult to modify through policy alone.

In essence, culture is not just a backdrop to the food scarcity conversation; it is an active force that shapes population growth, resource use, and sustainability. Understanding the cultural drivers of family size and dietary practices is therefore essential to any comprehensive analysis of global food security.

**Ethical Perspectives on Food Distribution**

While population growth and cultural practices shape food demand, many scholars argue that hunger in the modern world is rooted less in scarcity and more in ethical failure. Singer (2011) contends that the persistence of hunger in a world of abundance reveals deep moral obligations that wealthier individuals and nations often ignore. His argument positions food scarcity as a global ethical concern, calling for greater compassion, equity, and responsibility toward those who lack access to adequate nutrition.

Sen (1999) provides another influential ethical perspective, emphasizing that famines frequently occur not because there is no food, but because certain groups lack the entitlements economic, political, or social needed to access it. This view highlights inequality, governance, and structural barriers as critical elements in understanding hunger.

Furthermore, the staggering reality that one-third of all food produced globally is lost or wasted (FAO, 2023) underscores profound ethical contradictions. While millions face chronic hunger, vast quantities of edible food are discarded due to consumer behavior, supply chain inefficiencies, and profit-driven systems.

These ethical perspectives challenge the assumption that food scarcity is solely a production problem. Instead, they position hunger as a moral and political issue, one that demands fairness, solidarity, and a reevaluation of global priorities.

## Methodology

### Research Design

This study employed a quantitative survey research design to explore how individuals understand and interpret the relationship between population growth, cultural norms, and ethical attitudes toward food scarcity. The choice of a quantitative design was deliberate, as it allowed for the systematic collection of measurable data from a broad cross-section of participants. This approach also made it possible to identify statistical patterns, compare group responses, and draw inferences about the wider population. By using standardized questions, the study ensured consistency across respondents, thereby enhancing the reliability and validity of the findings.

### Sample and Sampling Procedure

The study sample consists of **412 respondents** drawn from both urban and rural communities. A **multi-stage sampling technique** was adopted to achieve a diverse and representative sample. First,

communities were stratified based on location and demographic composition. From these strata, clusters were randomly selected, and participants within each cluster were further chosen using systematic sampling. This method ensured that voices from different socio-economic, cultural, and geographic backgrounds were adequately captured.

**Instrumentation**

The research instrument was a structured questionnaire comprising three major sections, each designed to measure one of the study's core constructs:

i. **Population Growth Perception Scale** - assessed respondents' awareness, concerns, and judgments regarding the impact of population increase on food supply.
ii. **Cultural Norms and Family Size Scale** - captured cultural values, beliefs, and traditions influencing reproductive decisions and household size preferences.
iii. **Ethical Attitudes Toward Food Distribution Scale** - explored moral views on fairness, food access, waste reduction, and global responsibility in addressing hunger.

Each scale consisted of multiple Likert-type items rated on a 5-point continuum. Prior to full deployment, the instrument underwent a pilot test, and results showed strong internal consistency with **reliability coefficients ranging from .78 to .86**, indicating that the measures were both stable and dependable.

**Data Collection**

Data were gathered through **structured, self-administered questionnaires**, distributed with the assistance of trained research assistants. Respondents were guided where necessary to ensure clarity of instructions; especially in rural settings where literacy levels was low. Participation was voluntary, and anonymity was guaranteed to encourage honest and unbiased responses.

**Data Analysis**

Data analysis proceeded in several stages. First, **descriptive statistics**-including frequencies, percentages, means, and standard deviations were used to summarize respondents' demographic characteristics and provide an overview of response patterns. Next, **Pearson correlation analysis** was conducted to examine the relationships among population perceptions, cultural norms, and ethical attitudes. To further understand the predictive power of the independent variables, **multiple regression analysis** was employed. This allowed the study to determine the extent to which cultural norms and ethical attitudes collectively explained variations in perceptions of food scarcity. The use of these analytical techniques ensured a rigorous and comprehensive interpretation of the data.

**Results**

This section presented the findings from the responses of 412 participants drawn from both urban and rural communities. The results highlighted how people perceive population growth, the influence of cultural norms on family size, and the ethical concerns that shape attitudes toward food

scarcity. Overall, the findings revealed a complex interplay between demographic pressures, deeply rooted cultural beliefs, and moral judgments about fairness in food distribution.

**Table 1: Perception of Population Growth and Food Scarcity (n = 412)**

| Statement | Agree (%) | Disagree (%) |
|---|---|---|
| **Population growth threatens food security** | 71 | 29 |
| **Current food scarcity is caused more by inequality than population** | 63 | 37 |
| **Cultural values encourage large family sizes** | 76 | 24 |

As shown in **Table 1**, a significant majority (71%) believe that population growth directly threatens food security. Interestingly, 63% of respondents attribute current food scarcity to inequality rather than sheer population numbers. Additionally, 76% indicated that cultural norms continue to promote large family sizes, demonstrating the strong cultural influence on reproductive choices.

**Correlation Analysis**

A Pearson correlation analysis was conducted to examine the relationships among population perceptions, cultural norms, and ethical attitudes. The results showed strong and statistically significant associations:

| |
|---|
| Population perception × food scarcity concern: $r = .62$, $p < .01$ |
| |
| Cultural norms × large family size: $r = .71$, $p < .01$ |
| |
| Ethical attitudes × distribution fairness: $r = .54$, $p < .01$ |
| |

These correlations suggest that as concerns about population growth increase, so do perceptions of food scarcity. Similarly, stronger cultural norms are closely tied to preferences for larger families. Ethical attitudes also play a meaningful role in shaping beliefs about fairness in food distribution.

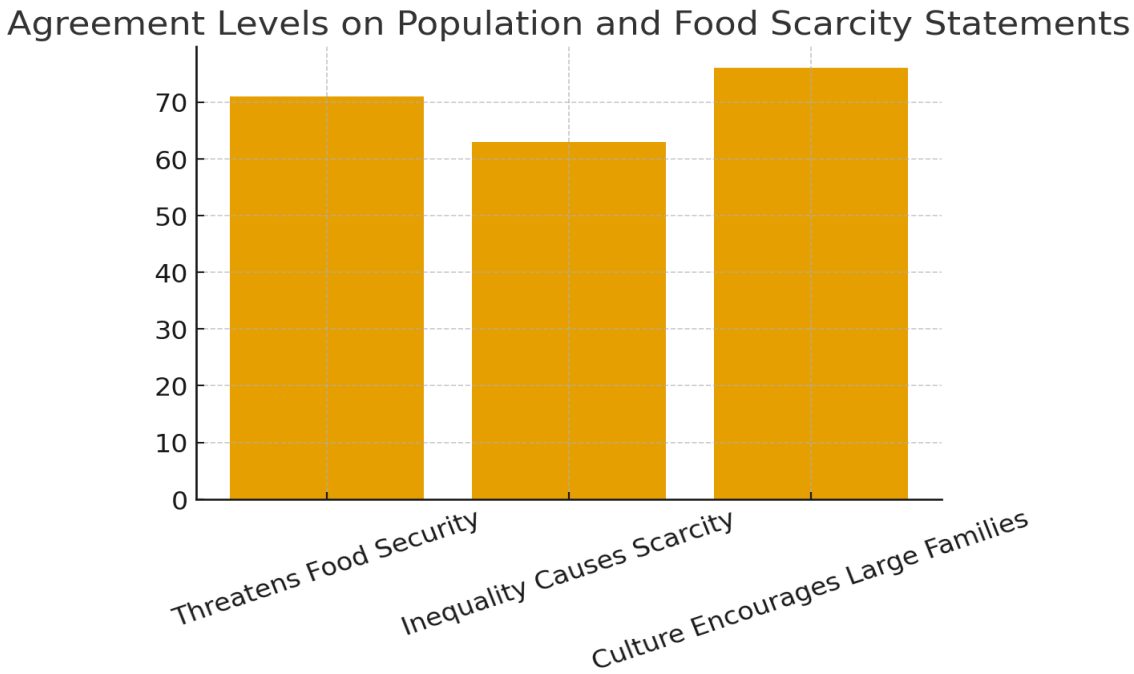


**Figure 1: Agreement Levels on Food Scarcity Factors**

**Figure 1** illustrates the distribution of agreement across the three key statements. The visual pattern shows the highest agreement on the influence of cultural values on family size, followed closely by concerns about population growth and inequality-driven food scarcity.

**Regression Analysis Summary**

To determine the extent to which population perceptions, cultural norms, and ethical attitudes predict concerns about food scarcity, a multiple regression analysis was conducted. The results revealed that the three predictors jointly explained 48% of the variance in food scarcity concerns

($R^2$ = .48, F(3, 408) = 126.72, p < .001).

This finding underscores the powerful combined impact of demographic awareness, cultural expectations, and moral reasoning on shaping public understanding of food-related challenges. It also highlights the multidimensional nature of food scarcity, emphasizing that solutions must address not only agricultural and environmental factors but also cultural and ethical dimensions.

**Discussion**

The findings of this study revealed a complex and intertwined relationship among population growth, cultural norms, ethical considerations, and perceptions of food scarcity. At a glance, the results appeared to affirm the long-standing Malthus view that rapid population expansion

intensifies concerns about the adequacy of global food supply (Malthus, 1798). A significant proportion of respondents expressed fear that rising population numbers could overwhelm available resources, mirroring anxieties about the Earth's capacity to sustain humanity. This perception suggests that despite major technological advances, Malthus apprehensions remain deeply rooted in public consciousness.

However, the results also aligned with the more contemporary argument advanced by Sen (1999), who emphasised that hunger and famine often stemmed from systemic inequalities rather than mere shortages of food. Respondents in this study echoed this stance, noting that unequal distribution, weak entitlement systems, and structural injustice played a major role in shaping current patterns of scarcity. This dual recognition of both biological pressure and social inequality highlighted the multidimensional nature of food insecurity in the modern world.

Cultural norms emerged as another powerful factor shaping perceptions of food scarcity. The strong correlation between cultural values and family-size preferences indicated that reproductive decisions are still embedded in long-standing traditions, communal expectations, and identity markers. Many societies continued to associate large families with social prestige, labour advantage, or continuity of lineage. These findings are consistent with Caldwell and Caldwell's (2003), on the assertion that cultural forces often outweigh economic conditions in shaping demographic behavior. Thus, while global discourse increasingly emphasises sustainable population practices, local cultural narratives continued to guide personal choices.

Ethical attitudes also played a significant role in predicting perceptions of food scarcity. Respondents who demonstrated heightened moral concern for fairness, food waste, and global responsibility tended to express stronger awareness of scarcity risks. This aligned with Singer's (2011) ethical framework, which underscores humanity's moral obligation to reduce suffering by addressing inequities in access, consumption, and resource management. The findings suggested that ethical consciousness particularly regarding food waste and distributive justice can shape public understanding of the global hunger challenge.

Taken together, these results illustrated that perceptions of food scarcity cannot be reduced to a single factor. Instead, they are shaped by the interplay of demographic pressures, cultural traditions, and moral orientations. While population growth continues to raise valid concerns, the study reinforced the view that solving food scarcity required addressing deeper structural and ethical issues such as improving distribution systems, challenging harmful cultural norms, and strengthening moral commitments to global equity.

Ultimately, this study emphasises the need for integrated solutions that consider not only the biological limits of the Earth, but also the social, cultural, and ethical frameworks that shape human behavior. Such an approach is essential if humanity is to answer the question posed in this study: **Will Earth be hungry?** The findings suggested that hunger is not inevitable, provided societies adopt just culturally sensitive and ethically informed strategies for sustaining the planet.

## Conclusion

The central question guiding this study-*Will the Earth be hungry?* does not yield a simple yes or no answer. Instead, the empirical evidence demonstrated that food scarcity is shaped by a constellation of interrelated forces. Population growth undeniably contributed to rising pressure on available resources, reinforcing long-standing concerns about the planet's capacity to sustain its growing human population. Yet, the findings also made clear that demographic expansion alone does not determine whether societies experience hunger or abundance.

Cultural norms emerged as a critical dimension of this reality. Patterns of reproduction, dietary choices, and community expectations around family size continued to be influenced by deeply rooted traditions. These cultural narratives often persist even when they no longer aligned with economic conditions or environmental constraints. As such, efforts to addressing food scarcity must go beyond technical solutions and engage meaningfully with the cultural logics that influence human behavior.

Equally important are the ethical considerations that shaped how societies use, distribute, and value food. Respondents who expressed stronger moral concern for fairness, waste reduction, and collective responsibility were more attuned to the risks of scarcity. This underscored the idea that food insecurity is not only a logistical problem but also a moral challenge, one that demands fairness, responsible consumption, and global solidarity.

In summary, preventing future hunger requires an integrated approach, one that combines technological innovation with cultural awareness and ethical commitment. Feeding the world sustainably will depend not only on producing more food, but on distributing it justly, respecting cultural contexts, and nurturing values that prioritise the well-being of all. The Earth may face pressure, but hunger is not inevitable if societies act intelligently, compassionately, and collectively.

## Recommendations

Building on the findings of this study, several practical recommendations emerge to address the multidimensional challenge of food scarcity:

i. **Promote Culturally Sensitive Family-Planning Programs**
Family-planning initiatives should be designed with careful consideration of local cultural beliefs and social norms. Programs that respect traditions while educating communities about sustainable family sizes can help balance population growth with food availability.

ii. **Integrate Ethical Education into Sustainability Curricula**
Schools and community programs should incorporate ethical training focused on fairness, responsible consumption, and global solidarity. By fostering moral responsibility from a young age, societies can encourage behaviors that reduce food waste and promote equitable distribution.

iii. **Enhance Global Cooperation to Address Inequality**
International collaboration is critical to ensuring that food reaches those in need. Policies and programs should prioritize fairness in distribution, support for food-insecure regions, and the reduction of structural inequalities that exacerbate scarcity.

iv. **Encourage Sustainable Consumption Practices**

Consumers, businesses, and governments must adopt practices that minimize food waste and optimize resource use. Public awareness campaigns, incentives for responsible consumption, and improvements in supply chain efficiency can significantly reduce the ethical and environmental impact of wasted food.

v. **Adopt Integrated Approaches to Food Security**
Policymakers and stakeholders should develop strategies that combine technological innovation with ethical guidance and cultural sensitivity. Such holistic approaches ensure that solutions address both the ecological and human dimensions of food scarcity.

By implementing these recommendations, societies can more effectively navigate the complex interplay of population dynamics, cultural practices, and ethical considerations, ultimately working toward a world in which hunger is minimized and food security is enhanced for all.

**Article Publication Details**

This article is published in the **OpenMind Journal of Humanities, Arts and Creative Studies**, ISSN XXXX-XXXX (Online). In Volume 1 (2025), Issue 1 (November - December) - 2025

The journal is published and managed by **OMR PUBLICATION** .



**Acknowledgements**

We sincerely thank the editors and the reviewers for their valuable suggestions on this paper.

**Funding**

The authors declare that no funding was received for this work.

**Data availability**

No datasets were generated or analyzed during the current study.

**Declarations**

**Ethics approval and consent to participate**

Non applicable.

**Consent for publication**

Not applicable.

**Competing interests**

The authors declare no competing interests.

**References**


1. Boserup, E. (1981). *Population and technological change: A study of long-term trends.* University of Chicago Press.
2. Caldwell, J. C., & Caldwell, P. (2003). The fertility transition in sub-Saharan Africa. In *Cultural influences on reproduction* (pp. 89–113). Routledge.
3. Food and Agriculture Organization. (2023). *The state of food security and nutrition in the world 2023*. FAO.
4. Garnett, T. (2014). Three perspectives on sustainable food security: Efficiency, demand restraint, food system transformation. *Environmental Science & Policy, 12*(3), 100–112.
5. Godfray, H. C. J., Bedding ton, J. R., Crute, I. R., Haddad, L., Lawrence, D., Muir, J., & Toulmin, C. (2018). The challenge of feeding 9 billion people. *Science, 327*(5967), 812–818.
6. Malthus, T. R. (1798). *An essay on the principle of population*. J. Johnson.
7. Oluwatoyin, A., & Ahmed, S. (2019). Cultural determinants of family size in West Africa. *African Population Studies, 33*(2), 1451–1465.
8. Sen, A. (1999). *Development as freedom.* Oxford University Press.
9. Singer, P. (2011). *The life you can save: Acting now to end world poverty.* Random House.
10. United Nations. (2022). *World population prospects 2022*. UN Department of Economic and Social Affairs.


**Publisher's Note**