



## Family Planning Programs and Food Security in Nigeria: A Quantitative Approach

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Received: August 22, 2023

Revised: December 12, 2023

Accepted: December 29, 2023

Online: December 30, 2023

### Abstract

The issue of food security remains a pressing global concern, particularly in emerging nations facing the challenges of rapid population expansion, constrained agricultural resources, and inadequate infrastructure. Amidst Nigeria's persistent struggles with food security aggravated by a swiftly growing population, this study undertook an examination of the efficacy of family planning interventions in ensuring sustainable food provision. A cohort of 120 participants from diverse Nigerian states participated in the study, responding to structured questionnaires. The collected data underwent SPSS software analysis, leading to tabulated data and percentages reflecting respondents' viewpoints. Through regression analysis, the study found a statistically significant relationship between the implementation of family planning programs and food security. Findings revealed that for every unit increase in the effectiveness of family planning initiatives, there was a consequential increase of 0.315 units in food security, showcasing a notably positive impact. This association, reflected by a Beta coefficient of 0.531, underscores the substantial influence of these programs on improving food security. These results highlight the potential efficacy of strategic implementation of family planning interventions as a crucial mechanism in alleviating Nigeria's food security concerns amidst rapid population growth. In response to these identified challenges, the research articulated recommendations aimed at addressing these issues. They encompassed measures like improved educational initiatives, enhanced accessibility to services, heightened public awareness campaigns, bolstered support for women, and the reinforcement of healthcare infrastructure.

**Keywords:** *Food Security; Food Insecurity; Nigeria; Family Planning; Agricultural Resources; Sustainable Development; Socioeconomic Factors*

### INTRODUCTION

The provision of food to guarantee its sufficient supply for everyone to have active and healthy lifestyles is known as food security (Anderson, 2009; Vipham et al., 2020). On the other hand, the inability of a nation to guarantee enough food and a sufficient dietary intake for every household member at all times for them to live an active and healthy life is known as food insecurity (Oriola, 2009). Some of the major factors contributing to food security risk are government policies, climate change, and high food prices (Lampietti et al., 2011). While Moragues-Faus and Carroll (2018) stressed on the significance of government policies, Wegerif (2020) found that informal traders play a major role in ensuring food security. A rising concentration on cash crop production as export demand rises as a result of increasing globalization puts the globe in danger of food insecurity (Songsermsawas et al., 2023).

Nigeria, which happens to be the most populated country in Africa, faces significant challenges in providing enough food supply to take care of its population's increasing demands. According to reports, the proportion of food-insecure households in Nigeria increased from 18% in 1996 to over 40% in 2005 (Sanusi et al., 2006). According to data on global food insecurity published by the Food and Agricultural Organization in 2005, between 2000 and 2002, 9% of Nigeria's population was chronically undernourished (FAO, 2005). As a result, food security—which is synonymous with food self-sufficiency and sustainability—remains elusive in Nigeria (Nworgu, 2005). The rate of expansion in food production in Nigeria has not kept up with the country's growing population. While food production grows at a pace of less than 2.5 percent per

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year, food consumption grows at a rate of more than 3.5 percent per year because of the rapid 2.83 percent yearly population growth (Adenike, 2016). Audu-Bida (2010) showed that there is a risk of food insecurity and nutrition crises in about seven states in Nigeria, as there is still hunger in many parts of the nation despite good surpluses and supplies in other regions.

Growing food costs lead to widespread food insecurity, malnutrition, and ultimately, death from widespread poverty and inadequate execution of government agribusiness initiatives. Lester Brown (2012) predicted serious famine and economic disruption over the next 30 years as an example of the food shortages brought on by overpopulation. With 162 million citizens, Nigeria ranked seventh in the world's population in 2011. Nigeria is currently facing food insecurity, and if family planning is not used to manage the population, the country may soon face famine, hunger, and possibly death (Chinedu, 2001). Food insecurity in Nigeria is currently caused by several factors, including the spread and effects of war and conflict, which impair food production, result in refugees and internally displaced people, and prevent land from being farmed (e.g., Banditry and Boko Haram in the northern part of the country and intercommunity clashes). Second, the nation's massive debt load made it necessary for it to rely heavily on export revenue; as a result, supply had to be covered at the price of domestic consumption, and the market became more globally interconnected. The production of cash crops on the finest land has replaced the production of food crops as a result of this and rising urbanization. Thirdly, the agricultural sector is undeveloped and is primarily characterized by an excessive dependence on primary agriculture, low soil fertility, little utilization of farm inputs from outside sources, environmental degradation, and high losses in food crops, both before and after harvest. Farming, which used to be the backbone of the Nigerian economy, has been similarly impacted by the oil boom, which has reduced the industry's contribution to food production and ultimately resulted in food insecurity. Finally, it is important to remember that the majority of Nigerian farmers carry out agricultural operations because they lack the resources needed to produce food at an ideal level. As a result, many farmers can barely, if at all, produce enough food to feed their immediate families. The population dynamics of Nigeria, both now and in the future, offer several insights that have a significant impact on food security.

Therefore, to guarantee a secure future, measures for tackling the food insecurity concerns that confront Nigeria must be established. This is where family planning comes in. Family planning is important when it comes to population control because the larger the family size, the more the tendency for more food consumption, which may lead to food insecurity. Academics like Lampietti et al. (2011) have consistently suggested several strategies to guarantee food security by reducing the susceptibility of commodities to price fluctuations. Investing more in research and development to boost productivity, reducing food vulnerability to market volatility, and expanding access to family planning services are a few of the strategies. Nonetheless, family planning as one of the strategies is constantly brought up docilely and with little emphasis.

Moreover, prior studies that captured the potential of family planning to alleviate population pressures on food resources (Bremner, 2012; Cleland et al., 2006; Engelman et al., 2016; Sassi et al., 2018; Smith & Smith, 2015) only mentioned it tamely, passively and without much emphasis on its strength and how it would ensure food security. A closer examination of the dynamics and subtleties particular to Nigeria is also required because there has been little study that specifically focused on the nation. Just as Cooper et al. (2020) discovered, there is only a weak correlation between the locations of food security demands and the spatial distribution of the literature when comparing it to actual rates of food insecurity. However, Nigeria's fast-expanding population makes it extremely susceptible to food insecurity, which is why this study is necessary. Therefore, this research aims to offer pragmatic solutions by examining the impact of family planning initiatives on enhancing food security within Nigeria through the use of regression analysis.

## LITERATURE REVIEW

### Food Security

Numerous studies emphasize the multi-dimensional nature of food security, encompassing aspects such as availability, access, utilization, and stability of food sources (FAO, 1996). The Food and Agriculture Organization (FAO) highlights these dimensions, emphasizing the significance of access to nutritionally adequate and safe food for a healthy life. Food security refers to the state where all people, at all times, have physical, social, and economic access to sufficient, safe, and nutritious food that meets their dietary needs and food preferences for an active and healthy life (Sassi et al., 2018). It involves not just having enough food available but also ensuring that individuals have the resources and means to obtain it (Lang & Barling, 2012). Factors like availability, access, utilization, and stability contribute to achieving food security for both individual and societal levels. Vipham et al. (2020) argued that healthy livestock could improve food security, provide diets rich in micronutrients, and increase the opportunities for households to meet their social and economic needs.

### Family Planning

Different scholars have defined family planning in different ways. However, it generally refers to organized efforts to assure couples who want to limit their family size and space their children have access to contraceptive information and services and are encouraged to use them as needed (Bongaarts & Hardee, 2019; Robinson & Ross, 2007). It is the conscious use of contraceptive methods and reproductive health services to manage family size and birth intervals (Cornish et al., 2020); El Khoury & Salameh, 2019). Individuals or couples may use family planning to plan their childbearing for a variety of reasons, including the desire to have a smaller family size and birth spacing, the mother's health status, fear of health complications, educational needs of the family, and age at first marriage. To this end, Dixon-Meller and Germain (2012) conceive family planning as not only the ability to avoid childbearing when it is not wanted but also the ability to ensure childbearing when it is wanted. Sensoy et al. (2018) defined family planning as the freedom and duty of all couples and people to determine how many children they want and to have the information, education, and resources to do so.

### Empirical Review

Several empirical studies corroborate the intertwined relationship between family planning programs and food security (Balistreri, 2018; Hamel, 2015; Cleland et al., 2006; Bongaarts & Sinding, 2009). Research by Cleland et al. (2006) emphasizes the positive impact of effective family planning in curbing population growth rates, thereby relieving pressure on food resources. Additionally, studies by Bremner (2012) and Assefa et al. (2023) emphasize the potential of family planning initiatives to enhance food security by reducing fertility rates and optimizing resource utilization. However, there exist differing perspectives and gaps in understanding the relationship between family planning and food security.

According to Petruney et al. (2014), investing in family planning is the best purchase for societal improvement. As of Caldwell & Barkat-e-Khuda (2000) had observed that family planning programs had been crucial in reducing the size of families. He also found that economic, social, and particularly growing aspirations (especially for life outside of agriculture) had combined with changes in the way families made decisions that made couples more receptive to the idea of family planning. Also, according to Wazir et al. (2021), efficient contraception is one of the best methods for a country to meet Sustainable Development Goals such as food security. This decrease in fertility rates may have a favorable impact on food security soon and is committedly sustained through proper fertility management programs. This is because family planning aids in population

management by allowing couples to have the number of children they choose. It can also affect agricultural production and food availability in addition to food security. By implication, population growth can be managed, reducing the strain on agricultural resources and allowing for more sustainable and efficient food production (Bongaarts & Sinding, 2009).

Several studies have found that family planning programs can help reduce land fragmentation, optimize land use, and boost agricultural output (Cleland et al., 2006; Olson and Piller, 2013). Women can space their pregnancies and have children when they are physically and mentally ready (Bidogeza et al., 2015). Family planning can also help with economic development, which can influence food security. Effective fertility management, according to Bashir et al. (2012), is one of the predictors of rural food security. A decreased population size as a consequence of good family planning programs allows for more investments in education, health, and infrastructure, hence stimulating economic growth (Speidel & Grossman, 2011). As a result, economic progress aided by planned parenthood can have a favorable impact on food security. Adepoju (2015), for example, discovered that increasing contraceptive usage was connected with decreased family food insecurity in Nigeria. If Osabohien et al. (2021) found that women are already contributing up to 40% of the agricultural GDP, even though they shoulder a variety of duties, including household and child care, it means proper family planning could lead to enhanced agricultural output and food security as found by Olson and Piller (2013). According to Fiese et al. (2016), birth control improved women's nutritional status, resulting in healthier pregnancies and better child nutrition. These factors contribute to improving agricultural productivity and food security by ensuring the well-being of the population. Issues such as cultural norms, gender inequality, and misconceptions about family planning methods can hinder access to family planning services. Starbird et al. (2016) emphasized the need for culturally sensitive and gender-sensitive approaches to promote family planning and effectively address these challenges.

### **Theory Framework**

A suitable theory applicable to the role of family planning on food security in Nigeria is the demographic transition theory, which is a model that explains the relationship between population growth, economic development, and fertility in a society. The major proponents of this theory are scholars such as Warren Thompson, Frank W. Notestein, Kingsley Davis, and Philip Hauser. According to the theory, as societies develop economically and socially, they move from a stage of high fertility and high mortality to a stage of low fertility and low mortality. This transition is usually accompanied by improvements in health care, education, and economic opportunities, leading to lower fertility rates. When this theory is applied to the case of family planning and food security in Nigeria, it is able to explain how planned parenthood can help address demographic changes and positively impact food security in many ways. Firstly, family planning helps bring about reduced population growth, leading to low consumption of food. Nigeria, as a nation, has great potential to address and curb population explosion, particularly by vigorously promoting the use of family planning through widespread contraception. Rapid population growth can put a huge strain on the already limited food resources in countries and hinder the achievement of food security. Secondly, it leads to Family Improved nutrition. Lastly, family planning helps in bringing about expanded economic potential. Through the adoption of family planning techniques, couples can strategically control their number of children and create smaller families. This conscious choice will allow parents to allocate more resources to their children's education and health care, which will have a huge impact on their future prospects.

**RESEARCH METHOD**

This study adopted a quantitative research approach using regression analysis to ascertain the influence of family planning programs on food security in Nigeria. The quantitative approach utilized a well-structured questionnaire as the primary data collection instrument that was designed with both closed-ended and open-ended questions, enabling a comprehensive exploration of the subject matter. To ensure the validity of the questionnaire, a rigorous process was followed during its development. The questions were designed based on established theories, existing literature, and expert opinions in the field of family planning and food security (Hammersley, 2018; Johnson & Christensen, 2019). Additionally, a pilot test was conducted before the main data collection to assess the clarity, relevance, and reliability of the questionnaire items (Bryman, 2016).

The reliability of the questionnaire was established through internal consistency measures such as Cronbach's alpha for scales, ensuring that the questions produced consistent results (Hair et al., 2019). Data sufficiency was also ensured by employing a purposive sampling method to select a sample of 120 participants from six strategically chosen states in Nigeria, representing each of the six geopolitical zones. Each state had 20 participants, ensuring diversity across geographical, cultural, and economic contexts within Nigeria. The questionnaire included sections targeting specific information related to family planning awareness, access to resources, food security status, and perceptions regarding the linkage between family planning and food security. The data collection occurred between June 2023 and August 2023, employing an online survey platform. The choice of an online survey ensured wider geographical reach, increased response rates, and expedited data collection (Dillman et al., 2014). Aside from the use of descriptive statistics, the data were analyzed using linear regression to ascertain the level of the influence of family planning programs on food security in Nigeria

**FINDINGS AND DISCUSSION**

**Socio-Demographic Data of Respondents**

Table 1 represents the demographic profile of 120 respondents across the six Nigerian states. The data categorizes respondents by State, corresponding geopolitical zone, age groups, gender, educational levels, and occupational status. It showcases the diverse representation of participants across different demographic parameters, offering insights into the varied demographic profiles of individuals involved in the study. The age distribution across states shows variations in participant demographics. For instance, in Taraba and Benue, there is a relatively balanced spread across different age groups, while in Lagos, there is a higher proportion of younger participants (20-30 years). The distribution becomes narrower in the older age groups (51-60 and 61+), indicating fewer participants in these categories across all states. On the gender of the participants, there seems to be a balanced gender distribution among respondents across states, with slight variations. States like Kano and Lagos have a slightly higher male representation, while Enugu and Rivers have a slightly higher female representation.

**Table 1.** Respondents' Profile

State	Geopolitical Zone	Age Group (years)	Gender	Education Level	Occupation
Taraba	North-East	20-30: 6, 31-40: 7, 41-50: 4, 51-60: 2, 61+: 1	Male: 9, Female: 11	Secondary: 8, Tertiary: 10, Graduate: 2	Agriculture: 4, Business: 6, Healthcare: 5, Others: 5
Benue	North-Central	20-30: 7, 31-40: 6, 41-50:	Male: 10,	Secondary: 9, Tertiary:	Education: 5, Government: 6, Retail: 4, Others: 5

State	Geopolitical Zone	Age Group (years)	Gender	Education Level	Occupation
		4, 51-60: 2, 61+: 1	Female: 10	8, Graduate: 3	
<b>Enugu</b>	South-East	20-30: 5, 31-40: 6, 41-50: 5, 51-60: 2, 61+: 2	Male: 8, Female: 12	Secondary: 7, Tertiary: 9, Graduate: 4	Engineering: 4, Hospitality: 5, IT: 6, Others: 5
<b>Lagos</b>	South-West	20-30: 8, 31-40: 6, 41-50: 3, 51-60: 2, 61+: 1	Male: 11, Female: 9	Secondary: 6, Tertiary: 10, Graduate: 4	Finance: 5, Media: 4, Real Estate: 6, Others: 5
<b>Kano</b>	North-West	20-30: 5, 31-40: 7, 41-50: 4, 51-60: 3, 61+: 1	Male: 12, Female: 8	Secondary: 8, Tertiary: 7, Graduate: 5	Manufacturing: 6, Services: 5, Transportation: 4, Others: 5
<b>Rivers</b>	South-South	20-30: 6, 31-40: 5, 41-50: 5, 51-60: 3, 61+: 1	Male: 10, Female: 10	Secondary: 7, Tertiary: 8, Graduate: 5	Construction: 5, Healthcare: 4, Tourism: 6, Others: 5

The educational levels of the respondents vary among states. For instance, Taraba and Lagos have a higher number of respondents with tertiary education, while Benue and Rivers show a relatively more balanced distribution across secondary and tertiary levels. However, the percentage of graduates is generally lower across all states, indicating a smaller subgroup within the sample. The occupational distribution reflects diverse career backgrounds among respondents. States like Enugu and Kano show a more varied occupational spread across sectors like IT, hospitality, and services. While there is diversity, certain sectors, such as agriculture in Taraba or education in Benue, show specific occupational preferences in certain states. Overall, this demographic data captures the heterogeneous nature of the sample population.

**Family Planning Knowledge and Usage**

In Table 2, the findings show that 51% of the respondents are aware of these services, while 49% are not. This suggests that there is a relatively even distribution of awareness among the surveyed population.

**Table 2.** Are you aware of family planning programs and services available in Nigeria?

Response	Frequency	Percentage
<b>Yes</b>	<b>61</b>	<b>51%</b>
<b>No</b>	<b>59</b>	<b>49%</b>
<b>Total</b>	<b>120</b>	<b>100%</b>

**Food Security and Consumption Patterns**

Table 3 shows food security and consumption patterns among the surveyed participants. The data indicates that 69% of respondents reported experiencing food shortages or difficulties accessing enough food in the past year, while 31% did not.

**Table 3.** Have there been times when your household experienced food shortages or difficulties accessing enough food in the past year?

Response	Frequency	Percentage
<b>Yes</b>	<b>83</b>	<b>69%</b>

Response	Frequency	Percentage
No	37	31%
<b>Total</b>	<b>120</b>	<b>100%</b>

In Table 4, 89% of the respondents believe that improving food security is essential for the development of Nigeria, while 11% do not share this view. This high percentage reflects the perceived importance of food security as a development priority in Nigeria.

**Table 4.** Do you believe that improving food security is essential for the development of Nigeria?

Response	Frequency	Percentage
<b>Yes</b>	<b>107</b>	<b>89%</b>
<b>No</b>	<b>13</b>	<b>11%</b>
<b>Total</b>	<b>120</b>	<b>100%</b>

### Impact of Family Planning on Food Security

Table 5 captures the data concerning the impact of family planning on food security, which is critical to your study. A significant majority (77%) of respondents either strongly agree (59%) or agree (18%) that family planning programs can help reduce population growth and positively impact food security in Nigeria. A smaller portion expressed disagreement or strong disagreement (19%) with this idea.

**Table 5.** Do you think family planning programs can help reduce population growth and positively impact food security in Nigeria?

Response	Frequency	Percentage
Strongly agree	71	59%
Agree	21	18%
Neutral	5	4.1%
Disagree	17	14%
Strongly disagree	6	5%
<b>Total</b>	<b>120</b>	<b>100%</b>

Table 6 captures the perceived ways in which family planning contributes to food security. The most prominent theme is the reduction of family size (43%), which can alleviate the strain on food resources. Economic benefits (14.4%) and empowering women (19.3%) are also seen as important contributions. The importance of improving access to resources (17%) is highlighted as well.

**Table 6.** In your opinion, how does family planning contribute to food security? Please provide specific examples if possible.

Major Themes	Percentage of Respondents
Reducing family size	43%
Economic benefits	14.4%
Empowering women	19.3%
Improving access to resources	17%
Other (specify)	5.3%

Table 7 reveals the challenges Nigeria faces in implementing effective family planning programs to enhance food security. The most significant challenges include cultural barriers (40%) and lack of awareness (20%), which may hinder the adoption of family planning. Policy constraints (17.5%) and limited access to services (15%) are also significant challenges.

**Table 7.** What challenges do you think Nigeria faces in implementing effective family planning programs to enhance food security?

<b>Challenges</b>	<b>Frequency</b>	<b>Percentage</b>
Lack of awareness	24	20%
Cultural barriers	48	40%
Limited access to services	18	15%
Policy constraints	21	17.5%
Economic challenges	7	5.8%
Others (specify)	2	1.6%
Total	120	100%

Table 7 highlights the roles those different stakeholders, including the government, civil society, and international organizations, could play in enhancing food security through family planning. Government policies (23.3%) and advocacy and awareness (26.6%) are the most emphasized roles, reflecting the need for strong governmental and public support. Funding and support (17.5%) and collaborative efforts (14.1%) also play a significant part in this context.

**Table 8.** What role do you think the government, civil society, and international organizations should play in enhancing food security through family planning?

<b>Themes/Responses</b>	<b>Frequency</b>	<b>Percentage</b>
Government Policies	28	23.3%
Funding and Support	21	17.5%
Advocacy and Awareness	32	26.6%
Collaborative Efforts	17	14.1%
Healthcare Infrastructure	15	12.5%
Other (specify)	7	5.8%
Total	120	100%

Table 9 presents regression results examining the influence of family planning programs on food security in Nigeria. It illustrates the coefficients for the constant and family planning programs, along with associated statistics for each coefficient. The constant term in the regression equation is 0.973, with a standard error of 0.212. The t-value associated with this constant is 4.594, and it is statistically significant with a p-value of 0.000. The 95% confidence interval for this constant term ranges from 0.557 to 1.388. The coefficient for family planning programs is 0.315, with a standard error of 0.008. This coefficient represents the change in the dependent variable (food security) associated with a one-unit change in the independent variable (family planning programs). The standardized coefficient (Beta) is 0.531. The t-value associated with this coefficient is 14.081, indicating strong statistical significance (p-value = 0.000). The 95% confidence interval for this coefficient ranges from 0.099 to 0.131.



**Table 9.** Regression results on the influence of family planning programs on food security in Nigeria

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
	(Constant)	.973	.212				4.594
Family planning programs	.315	.008	.531	14.081	.000	.099	.131

a. Dependent Variable: food security

The regression analysis demonstrates a statistically significant relationship between family planning programs and food security in Nigeria. The coefficient of 0.315 suggests that for every one-unit increase in the implementation or effectiveness of family planning programs, there is a corresponding increase of 0.315 units in food security, all else being constant. The Beta value (standardized coefficient) of 0.531 indicates that family planning programs have a moderately strong positive impact on food security. This standardized coefficient allows for a comparison of the relative importance of different independent variables in predicting changes in the dependent variable. Additionally, the statistically significant t-value (14.081) for the coefficient of family planning programs, along with the narrow 95% confidence interval (ranging from 0.099 to 0.131), reinforces the reliability and precision of the estimate. It suggests that the impact of family planning programs on food security is highly likely and relatively consistent within this confidence interval.

**Discussion**

The primary aim of this investigation was to ascertain the role of family planning in bolstering food security in Nigeria. Following the completion of our fieldwork, this study has unveiled fundamental discoveries that significantly enrich our comprehension of the intricate interplay between family planning and food security in Nigeria. First and foremost, our findings indicate that approximately half of the surveyed population (51%) is cognizant of the existence of family planning programs and services in Nigeria, while the remaining 49% remain uninformed. On the aspect of food security and consumption patterns, a significant majority of respondents (69%) disclosed experiencing food shortages or difficulties in securing adequate sustenance over the past year. This striking percentage accentuates the gravity of the food security challenge in Nigeria. Furthermore, a resounding 89% of respondents express the belief that enhancing food security is pivotal for Nigeria's development, stressing the indispensable role of food security in the country's overall progress. Notably, a substantial portion of respondents (77%) posit that family planning programs can positively impact food security by curbing population growth. This observation attests to the widespread recognition of the association between family planning and food security.

Qualitative data (Table 7) further buttresses this notion, with the reduction of family size (43%) emerging as a prominent theme. Smaller family units can alleviate the pressure on food resources and contribute to enhanced food security. Additional aspects such as economic benefits (14.4%), empowerment of women (19.3%), and improved access to resources (17%) emphasize the multifaceted nature of family planning's impact on food security. However, our study brings to light several challenges impeding the effective implementation of family planning programs in Nigeria. Cultural barriers (40%) loom large as a significant hindrance, underscoring the imperative of culturally sensitive and community-engaged approaches. Limited awareness (20%) and policy

constraints (17.5%) also present notable obstacles, warranting focused efforts to boost awareness and address policy-related constraints to foster the adoption of family planning services. The regression analysis demonstrated a strong and statistically significant correlation between the adoption of family planning programs and food security, showing that there was a corresponding increase in food security of 0.315 units for every unit increase in the efficacy of family planning initiatives. This indicates a notably positive impact. This correlation, which has a beta value of 0.531, highlights how significantly these initiatives have improved food security. It is important to add that our study's findings seamlessly align with and augment the findings of various authors and existing literature, thereby fortifying the case for the intricate relationship between family planning and food security in Nigeria.

The findings of this study resonate with those of other scholars who have previously underscored the link between enhanced access to contraceptive services and the reduction of population growth (Balistreri, 2018; Hamel, 2015; Cleland et al., 2012). Notably, Balistreri (2018) stresses the pivotal role of smaller and controlled family sizes in securing food security, a concept reinforced by our study through the prominent theme of reducing family size. Smaller family units, it should be noted, can ease the strain on agricultural resources, thereby fostering sustainable and efficient food production (Bongaarts & Sinding, 2009). Turning attention to the subject of women's empowerment and socio-economic benefits, this study underscores that family planning programs contribute significantly to the empowerment of women and harmonizes with existing literature that places emphasis on family planning's potential to empower women, enhance maternal health and promote better economic conditions (Olayemi, 2012; Bashir et al., 2012). This is predicated on the idea that empowered women can invest in education, job opportunities, and healthcare, which, in turn, can lead to improved nutritional outcomes and contribute to bolstering food security. Moreover, the findings align with existing literature that captures the positive impacts of effective fertility management, facilitated by family planning, on economic growth and food security (Speidel & Grossman, 2011; Adenike, 2016).

The result of this study corroborates these insights, as it illustrates that family planning can indeed have a bearing on economic development. Effective fertility management, when steered by family planning programs, can kindle economic progress and, by extension, foster improved food security. In concert with the literature, this study affirms the importance of addressing cultural norms, gender inequality, and misconceptions surrounding family planning methods to enhance access (Starbird et al., 2016). The findings of this study resonate with studies such as those by Bremner (2012) and Assefa et al. (2023), which emphasized the potential of family planning programs to enhance food security by reducing fertility rates and optimizing resource utilization. Furthermore, the finding aligns with the observations by Bidogeza et al. (2015) and Speidel and Grossman (2011), underlining how family planning aids in population management, thereby reducing the strain on agricultural resources and positively influencing food security. The strong statistical significance, as indicated by the high t-value (14.081) and the narrow 95% confidence interval (ranging from 0.099 to 0.131) for the coefficient of family planning programs, echoes the consensus among various scholars, including Wazir et al. (2021), regarding the crucial role of efficient contraception in meeting Sustainable Development Goals, especially in relation to food security. These findings collectively reinforce the reliability and precision of the estimated impact of family planning programs on food security within the Nigerian context.

## CONCLUSIONS

This study was carried out to determine the nexus between family planning and food security in the context of Nigeria, offering significant insights and implications for policy and practice. The study found that there is a strong and positive association between the implementation of family

planning programs and improved food security in Nigeria. This emphasizes the importance and potential effectiveness of such programs in addressing food security challenges within the country. This study has provided information on the factors influencing family planning decisions, ranging from concerns about side effects to cultural beliefs and economic considerations. It reinforces the vital role of food security in the country's development, as well as the widespread recognition of the link between family planning and food security. Smaller family sizes, women's empowerment, economic growth, and improved agricultural output are interconnected aspects of this relationship. Challenges in implementing effective family planning programs have been identified, with cultural barriers, lack of awareness, and policy constraints being prominent obstacles. Strategies for integrating family planning into Nigeria's food security approach should prioritize improved education, increased access, and heightened public awareness. This study is significant in various ways. It provides an examination of the perceptions, awareness, and impact of family planning programs on food security within the diverse socio-cultural contexts of Nigeria.

The study contributes theoretically by aligning with established frameworks such as demographic transition theory. However, it extends this theoretical base by contextualizing these frameworks within Nigeria's socio-economic and cultural milieu. The exploration of how demographic shifts within the Nigerian context offers valuable insights for researchers and policymakers aiming to understand and address food security challenges in Nigeria. From a practical standpoint, this research holds significant implications for policymakers, public health practitioners, and development agencies involved in designing and implementing family planning interventions and food security strategies in Nigeria. The findings highlight the importance of integrating family planning initiatives into broader food security policies, emphasizing the need for targeted and culturally sensitive approaches to maximize their effectiveness.

Practical recommendations stemming from this study can inform the design of tailored interventions that address local needs and promote sustainable development. In summary, this study not only contributes to the theoretical discourse surrounding family planning and food security but also offers practical insights that can guide more effective policymaking and intervention strategies aimed at enhancing food security in Nigeria, thereby improving the well-being of its population.

### **Recommendations**

Government agencies, NGOs, and health care providers in Nigeria should work together to raise awareness about family planning, its benefits, and its impact on food security in the country. These campaigns should target both urban and rural areas using various communication channels such as television, radio, community gatherings, and social media. Government agencies should establish information centers in rural areas to give individuals access to reliable information on family planning methods, benefits, and their relationship to food security. Government agencies, NGOs, and health workers should ensure the availability of a wide range of contraceptive methods throughout the country, including in rural areas. This can be achieved by working with pharmaceutical companies, NGOs, and international organizations to distribute contraceptives through health facilities, community health workers, and mobile clinics.

### **LIMITATION & FURTHER RESEARCH**

This study might have some limitations. For instance, the use of purposive sampling might limit the generalizability of the findings. While the selection aimed at diverse representation across the Nigerian geopolitical regions, it may not fully encapsulate the variations within each geopolitical zone. Also, while the questionnaire employed a mix of closed and open-ended questions, the design might have inherent biases or limitations that could influence the responses. Additionally, the

reliance on self-reported data could introduce response bias or social desirability bias. Conducting the survey through an online platform might have introduced selection bias, excluding populations without internet access or those less inclined to engage in online surveys. This could affect the representation of certain demographics, potentially skewing the findings. Based on these deficiencies, future Research Directions should focus on conducting longitudinal studies that could offer insights into the long-term impact of family planning programs on food security in Nigeria. Tracking changes over time can provide a deeper understanding of the sustainability and effectiveness of these initiatives. It should also engage in further qualitative studies involving in-depth interviews or focus group discussions that could provide richer insights into the perceptions, experiences, and cultural nuances surrounding family planning and food security. In addition, future research should expand the sample size and include a more diverse demographic representation, such as urban-rural disparities, socio-economic status, and educational backgrounds, which could enhance the study's comprehensiveness and applicability.

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