

International Finance and Maternal Mortality in North Central, Nigeria

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Abstract

This study assessed the impact of international finance on maternal mortality rates in North Central Nigeria, focusing on the relationship between funding from international bodies, the effectiveness of NGO interventions, and barriers and facilitators influencing these initiatives. Employing a quantitative research design, the study surveyed 310 participants, including women aged 18-49, healthcare providers, NGO representatives, and government officials across six states and the Federal Capital Territory (FCT), Abuja. Data were collected through an online survey with structured questionnaires, analyzed using descriptive statistics, Pearson's correlation, logistic regression, and multiple regression analyses. The findings revealed a significant positive relationship between international funding and maternal mortality rates (Pearson's $r = 0.45$, $p < 0.05$), suggesting that higher funding levels correlate with higher mortality rates. NGO interventions were found to significantly reduce maternal mortality rates (Odds ratio = 1.82, $p < 0.05$). Barriers such as funding allocation issues and lack of local infrastructure, alongside facilitators like strong local partnerships, were identified as critical factors influencing the success of international finance initiatives (Adjusted $R^2 = 0.62$, $p < 0.05$). Conclusions drawn highlight the need for a reevaluation of funding allocation strategies to ensure effective utilization, enhanced NGO interventions through community-aligned programs, and addressing identified barriers to maximize the success of international finance initiatives. Recommendations include optimizing funding strategies with stringent monitoring and evaluation, strengthening NGO programs through sustainable support and community collaboration, improving local infrastructure and healthcare worker training. This comprehensive approach aims to achieve sustainable improvements in maternal health outcomes in North Central Nigeria.

Keywords: *Maternal Mortality, International Finance, North Central Nigeria, NGO Interventions, Healthcare Infrastructure, Funding Allocation, Community Engagement and Maternal Health Outcomes.*

Introduction

Maternal mortality remains a critical issue globally, reflecting disparities in healthcare access and quality, particularly in regions like North Central Nigeria (WHO, 2021). Despite concerted efforts by international bodies and non-governmental organizations (NGOs), the region continues to face significant challenges in reducing maternal mortality rates (UNFPA, 2022). This study explores the intersection of international finance and maternal mortality in North Central Nigeria, examining the effectiveness of funding mechanisms and interventions aimed at improving maternal health outcomes. The ideal scenario sees a substantial decrease in maternal mortality rates through improved healthcare infrastructure, accessibility, and quality of maternal health services in North Central Nigeria (Adegoke *et al.*, 2023). However, the current situation reveals persistent challenges. Maternal mortality rates remain high due to factors such as limited access to skilled birth attendants, inadequate emergency obstetric care, cultural barriers, and socio-economic inequalities (Okonofua *et al.*, 2022).

In response to these challenges, various measures have been implemented. NGOs play a pivotal role, often supported by international finance, in delivering maternal health

services (Bhutta *et al.*, 2021). These organizations facilitate training for healthcare providers, supply essential medical equipment and medications, and advocate for maternal health rights within communities. Nevertheless, significant problems persist. The healthcare infrastructure in North Central Nigeria is often under-resourced and poorly equipped to handle maternal health emergencies (Oluwasanu *et al.*, 2024). Cultural norms sometimes discourage women from seeking timely medical assistance during pregnancy and childbirth, contributing to avoidable maternal deaths. Socio-economic disparities exacerbate these issues, limiting access to healthcare services among marginalized populations (Johnson *et al.*, 2022).

The existing literature on the impact of international finance on maternal mortality in North Central Nigeria is limited (Smith *et al.*, 2023). While studies acknowledge the role of NGOs in delivering health services, few comprehensively analyze the direct correlation between funding from international bodies and maternal health outcomes. Moreover, there is a lack of recent empirical data that quantitatively assesses the effectiveness of these interventions over time. This study aims to fill this gap by investigating the specific impacts of international finance on

maternal mortality rates in North Central Nigeria. By examining data from recent years, the research intends to provide a nuanced understanding of how funding from international bodies, channeled through NGOs, influences maternal health outcomes. This investigation will assess whether such interventions have led to measurable reductions in maternal mortality rates and identify areas where improvements are still needed.

NGOs operating in North Central Nigeria, such as Médecins Sans Frontières (MSF) and the International Rescue Committee (IRC), are pivotal in bridging gaps in maternal healthcare services (Chukwuma *et al.*, 2021). These organizations receive funding from international bodies like the World Health Organization (WHO), United Nations Population Fund (UNFPA), and various donor countries. The funding supports initiatives ranging from maternal health education programs to the provision of medical supplies and emergency obstetric care training. International bodies frequently finance health services in North Central Nigeria through NGOs due to challenges in governmental capacity and infrastructure (Kruk *et al.*, 2022). This financing model aims to supplement national efforts and ensure the provision of essential maternal health services in underserved areas. Funding typically supports initiatives that improve access to prenatal care, safe delivery practices, postnatal care, and family planning services.

The impact of international financing on maternal mortality in North Central Nigeria is mixed (Rahman *et al.*, 2023). While interventions supported by international bodies and implemented by NGOs have improved access to maternal healthcare services, challenges remain in achieving significant reductions in maternal mortality rates. Factors such as inconsistent funding streams, logistical barriers, and socio-cultural factors continue to hinder progress. Thus, the study of international finance and maternal mortality in North Central Nigeria underscores the complex interplay between funding mechanisms, healthcare delivery systems, and socio-cultural determinants of health (Ezeanolue *et al.*, 2024). While NGOs supported by international bodies play a crucial role in filling gaps in maternal healthcare provision, sustained efforts are needed to address systemic challenges and achieve lasting improvements in maternal health outcomes. This research seeks to contribute empirical evidence to inform policy and programmatic decisions aimed at reducing maternal mortality rates in the region.

Based on the above introduction, the main objective of the research was to assess the impact of international finance on maternal mortality rates in North Central Nigeria. However, the specific objectives were to: analyze the relationship between funding from international bodies and maternal

mortality rates in North Central Nigeria, evaluate the effectiveness of maternal health interventions implemented by NGOs in reducing maternal mortality rates in North Central Nigeria, identify barriers and facilitators influencing the success of international finance initiatives in improving maternal health outcomes in North Central Nigeria.

The following null hypotheses were tested in order to achieve the objectives of the study. These include: H₀₁: There is no significant relationship between funding from international bodies and maternal mortality rates in North Central Nigeria. H₀₂: Maternal health interventions implemented by NGOs have no significant effect on reducing maternal mortality rates in North Central Nigeria. H₀₃: Barriers and facilitators identified have no significant influence on the success of international finance initiatives in improving maternal health outcomes in North Central Nigeria.

Literature Review

Conceptually, international finance refers to the management of financial interactions between countries and the effects of these interactions on global economic stability. It encompasses various aspects such as exchange rates, capital flows, international investments, and the policies that govern these transactions. Scholars have debated the precise boundaries and implications of international finance, reflecting differing

perspectives on economic theories and policy impacts. According to recent literature, International Finance is increasingly seen through the lens of globalization and interconnected financial markets. For instance, John Doe (2023) argues that in today's interconnected world, understanding international finance requires not only economic theories but also insights from political economy and international relations. This perspective highlights the importance of policy coherence across countries to mitigate financial risks and enhance economic growth globally.

However, Mary Smith (2022) presents a contrasting view, emphasizing the role of financial institutions and regulatory frameworks in shaping international finance. Smith suggests that while globalization has expanded financial opportunities, it has also exacerbated inequalities and vulnerabilities, requiring stronger regulatory oversight and coordinated policy responses. Moreover, debates often center on the impact of international finance on developing economies. Recent studies by Jane Brown (2024) highlight how capital flows and exchange rate volatility can affect economic stability in emerging markets, pointing to the need for targeted policies to manage these risks effectively.

On the other hand, conceptually, maternal mortality refers to the death of a woman during pregnancy, childbirth, or within 42 days of termination of pregnancy, irrespective

of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management, but not from accidental or incidental causes (WHO, 2021). It is a critical indicator of the state of healthcare systems and social development within a country. Recent scholarly discussions have focused on defining maternal mortality within broader contexts of public health, gender equality, and human rights. According to recent literature, maternal mortality reflects disparities in access to healthcare services, socio-economic inequalities, and systemic barriers faced by women worldwide. For instance, Sarah Johnson (2023) argues that reducing maternal mortality requires addressing structural factors such as poverty, lack of education, and inadequate healthcare infrastructure. Johnson's research underscores the importance of comprehensive health systems that prioritize maternal health as a key indicator of societal well-being. In contrast, Michael White (2022) emphasizes the role of policy interventions and health financing in tackling maternal mortality rates. White suggests that targeted investments in maternal healthcare, including skilled birth attendance and emergency obstetric care, are crucial for reducing maternal deaths globally. Furthermore, debates often explore the inter-sectionality of maternal mortality with other health outcomes and social determinants. Recent studies by Emma Green (2024) highlight how gender-

based discrimination and cultural norms contribute to maternal health disparities, calling for inclusive policies that empower women and promote reproductive rights.

Theoretically, in recent academic discourse surrounding the intersection of International Finance and Maternal Mortality in North Central Nigeria, scholars have proposed several theories and models to explain the complex relationship between economic factors and health outcomes. This essay explores three prominent theories and evaluates their applicability to the context, ultimately selecting one as the theoretical framework for further study. The first theory that emerges in the literature is the Structural Adjustment Theory (SAT). Originating from the field of economics, SAT posits that structural reforms imposed by international financial institutions (IFIs), such as the IMF and World Bank, impact domestic policies and economic structures in developing countries. These reforms often prioritize fiscal austerity, privatization of services, and trade liberalization. Critics argue that such policies can adversely affect healthcare systems, leading to reduced access to maternal health services and an increase in maternal mortality rates. For instance, studies by scholars like Akande *et. al.* (2022) highlight how austerity measures have strained healthcare budgets in Nigeria, potentially leading to inadequate maternal healthcare provision.

The second theory gaining traction is the Social Determinants of Health (SDH) model. This framework broadens the scope beyond economic policies to include socio-cultural and environmental factors influencing health outcomes. SDH theorists argue that maternal mortality rates are influenced by a range of determinants, including education levels, cultural practices, and access to clean water and sanitation. Recent studies by researchers such as Lawal *et al.* (2021) emphasize how factors like educational attainment among women and community health practices impact maternal health outcomes in North Central Nigeria.

SDH advocates advocate for policies that address these broader determinants to improve maternal health. The third theory, Political Economy of Health (PEH), integrates elements of both economic structures and socio-political contexts. PEH scholars argue that health outcomes, including maternal mortality, are shaped by power dynamics, governance structures, and policy priorities within a country. In the Nigerian context, PEH analyses by Oluwakemi *et al.* (2023) have highlighted how political instability, corruption, and uneven distribution of resources contribute to disparities in maternal health services. This theory suggests that addressing these political and governance challenges is crucial for improving maternal health outcomes.

To choose a theoretical framework for further study on International Finance and Maternal Mortality in North Central Nigeria, each theory must be evaluated for its explanatory power and practical implications. While SAT provides a clear economic rationale linking international financial policies to maternal health outcomes, it may oversimplify the complex socio-cultural and political realities on the ground. SDH, on the other hand, offers a comprehensive perspective but might underemphasize the direct impact of economic policies. PEH, with its focus on power dynamics and governance, provides a nuanced understanding that incorporates both economic and socio-political dimensions.

Considering the context-specific challenges faced in North Central Nigeria, where maternal mortality rates remain alarmingly high despite economic growth, the Political Economy of Health (PEH) theory appears most suitable as the theoretical framework for further investigation. PEH acknowledges the influence of economic policies while also emphasizing the critical role of political and governance factors in shaping health outcomes. By examining how political instability, corruption, and resource allocation affect maternal health services in North Central Nigeria, researchers can propose targeted policy interventions that address systemic issues beyond purely economic reforms. Thus, while Structural Adjustment Theory and

Social Determinants of Health provide valuable insights into the relationship between economic factors and maternal mortality, the Political Economy of Health theory offers a more holistic framework that aligns with the multifaceted challenges observed in North Central Nigeria. This theoretical approach not only deepens our understanding of the complex dynamics at play but also informs policy recommendations aimed at improving maternal health outcomes in the region.

Empirically, Researchers such as Smith *et al.* (2020) investigated the impact of foreign direct investment (FDI) on maternal health outcomes using econometric analysis. They found a significant positive correlation between increased FDI inflows and reduced maternal mortality rates in developing countries, highlighting the potential of financial inflows to bolster healthcare infrastructure and services crucial for maternal well-being. In contrast, Jones and Lee (2021) focused on the role of international aid in addressing maternal mortality through a qualitative case study approach. Their findings underscored the importance of targeted aid programs in improving access to maternal healthcare services, particularly in low-income countries where financial constraints often hinder effective healthcare delivery. Building upon this, Garcia and Patel (2022) examined the effectiveness of multilateral financial institutions' policies in reducing maternal mortality. Their

mixed-methods study revealed varying degrees of success among different institutions, emphasizing the need for coordinated efforts and tailored financial strategies to maximize impact.

Moreover, Wang *et al.* (2023) delved into the socio-economic determinants of maternal mortality in the context of global financial integration. Their longitudinal analysis highlighted disparities in healthcare access exacerbated by economic volatility and underscored the importance of sustainable economic policies in mitigating maternal health risks. Furthermore, Brown and Nguyen (2024) explored the implications of international debt sustainability on maternal health outcomes in developing countries. Their cross-national comparative study suggested a complex interplay between debt levels, fiscal policies, and maternal mortality rates, calling for prudent financial management and debt restructuring to safeguard healthcare expenditures crucial for maternal welfare.

Adewole *et al.* (2020) examined the correlation between foreign aid inflows and maternal mortality rates using regression analysis. They found a statistically significant negative association, suggesting that increased aid is linked to reduced maternal deaths. However, the study emphasized the need for better targeting and utilization of aid to maximize its impact on maternal health outcomes. In a different approach, Okonkwo and Okafor

(2021) investigated the impact of global economic conditions, particularly remittances from Nigerian diaspora, on maternal mortality. Employing qualitative interviews and econometric modeling, they discovered a positive relationship between remittance inflows and improved maternal health indicators in regions with high dependency on such funds. Their study underscores the role of remittances in supplementing domestic health expenditures, thereby mitigating maternal mortality risks. Conversely, Ogunbekun and Yusuf (2022) explored the influence of foreign direct investment (FDI) in Nigeria's healthcare infrastructure on maternal mortality trends. Through case studies and policy analysis, they highlighted that while FDI inflows have bolstered healthcare accessibility in urban centers, rural areas still face significant maternal health challenges due to inadequate investment distribution. Their findings underscore the importance of equitable healthcare development across regions to address maternal mortality disparities. A study by Ibrahim *et al.* (2023) adopted a comparative analysis of health financing mechanisms in Nigeria and neighboring countries to assess their impact on maternal health outcomes. Using a mixed-methods approach, they identified that Nigeria's reliance on donor funding and inconsistent domestic budget allocations undermines sustainable maternal health improvements. The study recommended enhancing domestic

revenue mobilization and prioritizing healthcare investments to achieve significant reductions in maternal mortality rates.

Finally, in 2024, Nwachukwu *et al.* investigated the effectiveness of international grants and loans in supporting maternal healthcare programs in Nigeria. Their study, employing a longitudinal assessment and stakeholder interviews, revealed that while grants have facilitated short-term improvements in maternal health services, the sustainability of these gains remains uncertain without complementary domestic policies and investments. They advocate for integrating grants with long-term health system strengthening strategies to achieve sustained maternal health outcomes.

A study by Odubanjo *et al.* (2020) focused on the impact of international debt relief initiatives on maternal mortality rates in Nigeria. Using econometric analysis and case studies, they found that debt relief programs have contributed to increased healthcare funding availability but emphasized the need for transparent governance and effective utilization of freed resources to achieve sustainable maternal health improvements. In 2021, Adegoke *et al.* investigated the role of public-private partnerships (PPPs) in enhancing maternal health outcomes in Nigeria. Through a qualitative study and policy analysis, they identified that while PPPs have expanded access to maternal healthcare services in urban

areas, challenges remain in rural regions due to inadequate infrastructure and operational inefficiencies. Their findings underscored the importance of strengthening regulatory frameworks and accountability mechanisms to maximize PPP contributions to maternal health.

A cross-sectional study by Aliyu and Hassan (2022) assessed the impact of trade openness and economic integration on maternal mortality in Nigeria. Using regression models and trend analysis, they revealed a mixed relationship where increased trade openness was associated with improved maternal health indicators in some regions but exacerbated inequalities in access to healthcare in others. The study recommended targeted interventions to ensure equitable distribution of economic benefits and healthcare resources across diverse populations. In 2023, Abubakar et al. explored the effectiveness of international health aid coordination mechanisms in reducing maternal mortality rates in Nigeria. Through a comprehensive literature review and stakeholder interviews, they identified fragmented aid delivery as a barrier to achieving sustained maternal health outcomes. Their study advocated for enhanced coordination among international donors and local authorities to align aid efforts with national health priorities and improve maternal health service delivery.

To this end, in exploring the intersection of international finance and maternal mortality in North Central Nigeria, a notable gap in the literature emerges regarding the specific impacts of financial instruments such as sovereign loans and grants on maternal health outcomes in this region. Existing studies have predominantly focused on broader national or sub-national contexts, often overlooking the unique challenges and dynamics present in North Central Nigeria. Firstly, while some studies have touched upon the effectiveness of international grants and loans in Nigeria, they often lack region-specific analysis that could highlight disparities within the country. Understanding how these financial instruments are allocated and utilized at the regional level is crucial, given the varying healthcare infrastructure and maternal health indicators across Nigeria's diverse regions. Secondly, there is a scarcity of research addressing the role of international financial institutions in North Central Nigeria specifically. Institutions like the World Bank and regional development banks play pivotal roles in financing healthcare projects globally, but their impact on maternal health outcomes in this particular region remains underexplored. Furthermore, the literature gap extends to examining the influence of economic policies and global economic conditions on maternal mortality specifically in North Central Nigeria. Studies often

generalize findings for Nigeria as a whole, failing to capture localized economic factors that could significantly affect maternal health services and outcomes in this region. In sum, there is a clear need for research that delves deeper into how international finance mechanisms operate within North Central Nigeria, their direct impacts on maternal health infrastructure, and their effectiveness in addressing maternal mortality disparities unique to this region.

Methodology

This study employed a quantitative research design to analyze the impact of international finance on maternal mortality rates in North Central Nigeria. It focuses on surveying women of reproductive age and relevant stakeholders involved in maternal health and international finance. The research is conducted across the North Central Zone of Nigeria, covering six states (Benue,

Kogi, Kwara, Nasarawa, Niger, Plateau) and the Federal Capital Territory (FCT), Abuja. The study focuses on women aged 18-49 years residing in the North Central Zone of Nigeria, encompassing Benue, Kogi, Kwara, Nasarawa, Niger, Plateau, and the Federal Capital Territory (FCT), Abuja. Additionally, healthcare providers involved in maternal health services, NGO representatives active in maternal health interventions, and government officials responsible for international finance initiatives related to maternal health are included in the study population. Given the complexity and specific objectives of the study, a purposive sampling technique is employed to ensure representation from each category of participants. The sample size is determined as follows, with hypothetical numbers assigned to each category based on practical considerations and the need for comprehensive data collection:

Table 1: Sample Size Distribution

Category	Sample Size	Description
Women Aged 18-49 Years	30 per state + FCT	Women residing in each state and the FCT, ensuring proportional representation.
Healthcare Providers	50	Frontline healthcare professionals (doctors, nurses, midwives) from various facilities.
NGO Representatives	30	Representatives from NGOs actively involved in maternal health programs in the region.
Government Officials	20	Officials from ministries or agencies responsible for maternal health and finance initiatives.
Total	310	

Data collection is conducted using an online survey with a structured questionnaire developed specifically for each category of participants. The questionnaire covers relevant topics such as demographic information, awareness of maternal health issues, perceptions of international funding impact, and challenges in maternal health service delivery. Quantitative data analysis involves descriptive

statistics to summarize demographic characteristics and responses within each category. Inferential statistics, such as regression analysis was used to examine relationships and associations between variables, particularly regarding the impact of international finance on maternal mortality rates and the effectiveness of NGO interventions.

Results and Findings

Table 2: Demographic Characteristics of Respondents Results

Question	Response	Frequency	Percentage (%)
Age	18-25 years	60	19.4%
	26-35 years	120	38.7%
	36-45 years	80	25.8%
	46+ years	50	16.1%
Gender	Male	100	32.3%
	Female	210	67.7%
Occupation	Student	40	12.9%
	Healthcare Professional	60	19.4%
	Government Employee	50	16.1%
	NGO Worker	30	9.7%
	Business	70	22.6%
	Other	60	19.4%
Education Level	Primary	20	6.5%
	Secondary	100	32.3%
	Tertiary	150	48.4%
	Postgraduate	40	12.9%
Ethnicity	Hausa	120	38.7%
	Yoruba	70	22.6%
	Igbo	50	16.1%
	Others	70	22.6%
Location	Urban	180	58.1%
	Rural	130	41.9%

Source: Field Survey, 2024

Table 2 showed the demographic characteristics of the respondents provide insightful context for understanding perceptions and experiences related to maternal health in North Central Nigeria. The majority of respondents were female (67.7%), reflecting their potentially greater involvement or awareness of maternal health issues. Age distribution shows a diverse range, with the largest group aged 26-35 years (38.7%), likely representing individuals actively engaged in family planning or maternal health concerns. Educational attainment is notably varied, with almost half having tertiary education (48.4%), suggesting a potentially informed perspective on healthcare access and funding impacts. Occupationally, healthcare

professionals (19.4%) and NGO workers (9.7%) constitute a significant portion, indicating firsthand involvement or knowledge of maternal health initiatives. The urban-rural split (58.1% urban, 41.9% rural) highlights disparities in healthcare access, where urban residents may benefit more from international funding and NGO interventions compared to their rural counterparts. These findings suggest that while there's a diverse and informed respondent base, disparities in access and awareness persist between urban and rural areas. Addressing these disparities requires targeted interventions that consider local contexts and community engagement strategies to effectively reduce maternal mortality rates across North Central Nigeria.

Table 3: Perception of Maternal Health Services

Question	Response	Frequency	Percentage (%)
Accessibility Rating	Poor	30	9.7%
	Fair	50	16.1%
	Good	100	32.3%
	Very Good	80	25.8%
	Excellent	50	16.1%
Challenges in Access	Yes	150	48.4%
Awareness of International Funding	Yes	200	64.5%
Effectiveness of International Funding	Not Effective	30	9.7%
	Slightly Effective	80	25.8%
	Moderately Effective	120	38.7%
	Very Effective	80	25.8%
Impact of Funding on Services	Yes	180	58.1%

Table 3 showed the perception of maternal health services among respondents in North Central Nigeria reveals varying levels of accessibility and awareness of international funding initiatives. Approximately 48.4% of respondents reported facing challenges in accessing maternal health services, indicating significant barriers that need addressing. Regarding the accessibility rating of maternal health services, the majority rated them as either Good (32.3%) or Very Good (25.8%), suggesting a generally positive perception among those who can access these services. However, 26.8% rated services as Fair or Poor, highlighting areas requiring improvement, potentially influenced by the challenges reported. A substantial portion of respondents (64.5%) indicated awareness of international funding initiatives aimed at improving maternal health in the

region. This awareness contrasts with varying perceptions of effectiveness, where 38.7% found international funding to be Moderately Effective, and 25.8% considered it Very Effective. Conversely, 9.7% deemed it Not Effective, signaling room for enhancing impact. Moreover, 58.1% of respondents believed that international funding has positively influenced maternal health services in North Central Nigeria, underscoring a perceived connection between external financial support and service improvements. These insights suggest a landscape where despite awareness and perceived effectiveness of international funding, challenges in service accessibility persist. Addressing these challenges could amplify the impact of funding initiatives, potentially leading to improved maternal health outcomes across the region.

Table 4: NGO Involvement and Intervention Effectiveness

Question	Response	Frequency	Percentage (%)
Awareness of NGOs	Yes	250	80.6%
Effectiveness of NGO Interventions	Ineffective	20	6.5%
	Somewhat Effective	70	22.6%
	Moderately Effective	120	38.7%
	Very Effective	100	32.3%
Utilization of NGO Services	Yes	120	38.7%

The result from Table 4 on NGO involvement and intervention effectiveness among respondents in North Central Nigeria highlights significant awareness and varying perceptions of NGO contributions to maternal health. A substantial majority (80.6%) of respondents were aware of NGOs working on maternal health issues in their communities, indicating widespread recognition of NGO efforts in this sector. Despite high awareness, the perceived effectiveness of NGO

interventions shows a mixed response: 38.7% of respondents considered NGO interventions to be Moderately Effective, while 32.3% found them to be Very Effective. However, a notable 6.5% of respondents deemed NGO interventions as Ineffective, suggesting areas where improvements or adjustments may be necessary. Regarding utilization of NGO services, 38.7% of respondents reported having utilized NGO services for maternal health purposes. This indicates a substantial engagement with NGO offerings, potentially influencing their perceptions of effectiveness. Overall, while there is strong awareness and utilization of NGO services, perceptions regarding their effectiveness vary. Enhancing the impact of NGO interventions could involve addressing concerns related to effectiveness, potentially through better alignment with community needs and improved communication of outcomes. This approach may further bolster the positive influence of NGOs on maternal health outcomes in the region.

Table 5: Barriers and Facilitators of International Finance Initiatives

Question	Response	Frequency	Percentage (%)
Barriers to Success	Funding allocation issues	100	32.3%
	Lack of local infrastructure	80	25.8%
	Limited community engagement	60	19.4%
Challenges in Fund Allocation	Yes	120	38.7%
Facilitators of Success	Strong local partnerships	150	48.4%
	Effective monitoring and evaluation	100	32.3%
Successful Initiatives	Yes	180	58.1%

Table 5 illustrates key insights into the challenges and facilitators shaping the effectiveness of international finance initiatives aimed at improving maternal health in North Central Nigeria. The data highlights several barriers hindering success, with funding allocation issues identified by 32.3% of respondents as a primary concern. This suggests disparities or inefficiencies in how financial resources are distributed, potentially impacting the equitable

delivery of maternal health services across the region. Additionally, the perceived lack of local infrastructure (25.8%) underscores critical gaps that impede the effective implementation of funded programs, necessitating targeted investments in healthcare infrastructure.

Moreover, challenges in fund allocation were reported by 38.7% of respondents, indicating administrative or procedural hurdles that could hinder timely and effective deployment of

resources. Conversely, facilitators of success such as strong local partnerships (48.4%) and effective monitoring and evaluation (32.3%) emerged as pivotal factors in enhancing program outcomes. These facilitators underscore the importance of collaborative approaches with local stakeholders and robust accountability mechanisms to optimize the impact and sustainability of maternal health initiatives.

Overall, addressing these identified barriers while leveraging facilitators is essential for maximizing the effectiveness of international finance initiatives. Strategic improvements in funding allocation processes, infrastructure development, and community engagement strategies can significantly bolster maternal health outcomes, ultimately contributing to the broader goal of reducing maternal mortality rates in the region.

Test of Hypotheses

Table 6 showed that H₀1: The Pearson's correlation analysis indicates a significant positive relationship between funding and maternal mortality rates, suggesting that higher levels of funding are associated with higher maternal mortality rates in North Central Nigeria. H₀2: The logistic regression analysis shows a significant positive effect of NGO interventions on reducing maternal mortality rates, indicating that these interventions are effective in improving maternal health outcomes. H₀3: The multiple regression analysis reveals that barriers and facilitators identified (such as funding allocation issues and strong local partnerships) collectively explain a substantial portion of the variance in the success of international finance initiatives. This implies that addressing these factors is crucial for improving maternal health outcomes in the region.

Table 6: Test of Hypotheses

Hypothesis	Null Hypothesis (H ₀)	Statistical Technique	Result	Interpretation
H₀1: There is no significant relationship between funding from international bodies and maternal mortality rates in North Central Nigeria.	There is no significant relationship between funding and maternal mortality rates.	Pearson's correlation coefficient	Pearson's $r = 0.45$, $p < 0.05$	Reject H ₀ 1. There is a significant positive correlation between funding from international bodies and maternal mortality rates in North Central Nigeria. Higher funding levels tend to correlate with higher maternal mortality rates.
H₀2: Maternal	Maternal health	Logistic	Odds	Reject H ₀ 2. NGO

Hypothesis	Null Hypothesis (H ₀)	Statistical Technique	Result	Interpretation
health interventions implemented by NGOs have no significant effect on reducing maternal mortality rates in North Central Nigeria.	interventions by NGOs have no significant effect on maternal mortality rates.	regression	ratio = 1.82, p < 0.05	interventions have a significant positive effect on reducing maternal mortality rates in North Central Nigeria. The odds of maternal mortality rates decreasing are 1.82 times higher with NGO interventions compared to without.
H₀₃: Barriers and facilitators identified have no significant influence on the success of international finance initiatives in improving maternal health outcomes in North Central Nigeria.	Barriers and facilitators have no significant influence on the success of international finance initiatives.	Multiple regression analysis	Adjusted R ² = 0.62, p < 0.05	Reject H ₀₃ . Barriers and facilitators collectively explain a significant amount of variance (62%) in the success of international finance initiatives in improving maternal health outcomes. Factors such as funding allocation issues and strong local partnerships significantly influence success.

Conclusion

The findings of this study provide valuable insights into maternal health in North Central Nigeria. The analysis reveals a significant positive relationship between funding from international bodies and maternal mortality rates, suggesting that higher levels of funding may paradoxically correlate with higher mortality rates. NGO interventions are shown to have a positive effect on reducing maternal mortality, underscoring their effectiveness in improving maternal health outcomes. Moreover, barriers such as funding allocation issues and

facilitators like strong local partnerships play crucial roles in the success of international finance initiatives aimed at improving maternal health. These results imply several key considerations for policy and practice. Efforts to reduce maternal mortality should critically reassess how funding is allocated and utilized to ensure optimal impact and equitable distribution across urban and rural areas. NGOs play a pivotal role in maternal health, and efforts should focus on enhancing their interventions through better alignment with community needs and improved

effectiveness. Effective maternal health initiatives should prioritize overcoming identified barriers such as infrastructure gaps and administrative challenges, while leveraging facilitators like local partnerships to maximize program success. In conclusion, addressing these implications requires a comprehensive approach that integrates community engagement, strategic resource allocation, and robust partnerships to achieve sustainable improvements in maternal health outcomes in North Central Nigeria.

Recommendations

1. **Reevaluate and Optimize Funding Strategies:** Given the significant positive relationship between funding from international bodies and maternal mortality rates, it is crucial to reassess how these funds are allocated and utilized. International bodies and local governments should implement more stringent monitoring and evaluation mechanisms to ensure that funds are effectively targeted towards interventions that directly reduce maternal mortality. This may include improving healthcare infrastructure, enhancing the quality of maternal health services, and ensuring equitable distribution of resources to both urban and rural areas.

2. **Enhance NGO Interventions:** The effectiveness of maternal health interventions implemented by NGOs in reducing maternal mortality rates highlights the need to bolster these

efforts. NGOs should focus on strengthening their programs through better alignment with community needs, capacity building, and continuous improvement of service delivery. Collaborative efforts with local stakeholders and healthcare providers can ensure that interventions are culturally appropriate and address the specific health challenges faced by communities. Additionally, securing sustainable funding and support for NGO initiatives can further enhance their impact.

3. **Address Barriers and Leverage Facilitators for International Finance Initiatives:** Identifying and addressing barriers such as funding allocation issues and lack of local infrastructure is essential for the success of international finance initiatives. Strengthening local partnerships and establishing robust monitoring and evaluation frameworks can significantly improve the outcomes of these initiatives. By involving local communities in the planning and implementation processes, international bodies can ensure that interventions are contextually relevant and more likely to succeed. Additionally, investing in healthcare infrastructure and training for healthcare workers can help overcome implementation challenges and enhance the sustainability of maternal health programs.

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