Evaluating The Impact of NGO Partnerships on Healthcare Delivery in Low-Resource Settings: The Case of the Savannah Region.

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ABSTRACT

Introduction and Aims:

Access to healthcare is a significant challenge for low-resource settings in developing countries, where services are often scarce, inaccessible, or unaffordable. This research explores the impact of local and international non-governmental organizations (NGOs) in the Savannah Region in the areas of Access to Healthcare, Quality of Care, Health Outcomes, Challenges and Limitations, Partnership and Collaboration, and Innovation and Technology, focusing on areas such as Effectiveness and Efficiency, Collaboration and Coordination, Sustainability and Capacity Building, Equity and Access, Accountability and Governance, and Information and Technology.

Methods:

The study utilized a cross-sectional design with a mixed method (quantitative and qualitative) approach. A stratified random sampling technique was used to select a sample of 400 respondents from a population of 3119. A 5-point Likert-scale questionnaire, Focus Group Discussion (FGDs), and on-site document review were used for data collection. Data was analyzed using Likert Scale rubrics (ratings), SPSS version 21.0, and Secondary Medical Data Analysis. Data was descriptively and inferentially presented.

Results

Quantitatively, the study found significantly strong relationships between predictor and outcome variables. The study found that local NGOs significantly improved access to healthcare services (R^2 = 83.3%), while international health agencies significantly improved healthcare quality (R^2 = 93.8%). Joint local and international partnerships have significantly improved health outcomes (R^2 = 74.9%), resulting in reduced mortality rates, enhanced health status, and improved management of chronic diseases. However, NGOs faced challenges such as funding constraints, operational issues, and staff shortages. Collaboration and partnership were crucial for improving healthcare outcomes (R^2 = 95.6%), with resource sharing, health facility resilience, and stakeholder collaboration being essential. Additionally, health-related NGOs promoted innovation and technology (R^2 = 81.5%), with digital health technologies, sustainable financial mechanisms, and healthcare innovations being key drivers. Qualitative analysis indicates that despite positive impacts from health-related NGOs' activities in the Savannah Region, challenges, including inconsistent vaccine supply affecting immunization coverage, referral difficulties in areas without NGO coverage, gaps in maternal death audits, and a lack of specialty services like pediatrics and ophthalmology, persist.

Conclusions and Recommendations:

The study concludes that health-related local NGOs have improved access to healthcare in the Savannah Region, especially in hard-to-reach areas, through clinics, outreach, and community education. International health-related NGOs and agencies like WHO, USAID, UNOPS, GAVI, and UNICEF have enhanced healthcare quality via capacity building and strategic investments. Joint partnerships have reduced mortality rates and improved

health outcomes. However, challenges persist, including funding constraints, staff shortages, and inconsistent vaccine supply.

The study recommends that to address these issues, the Regional Health Directorate should support local NGOs, collaborate with international agencies, and foster partnerships to strengthen health systems. District Health Directorates should enhance community engagement, prioritize maternal death audits, and improve referral networks. Key focus areas should include resource sharing, health facility resilience, and addressing gaps in specialty services like pediatrics and ophthalmology. There should be the prioritization of emergency response and investment in sustainable financial mechanisms. Additionally, monitoring and evaluation, staff capacity building, and promotion of innovation and the adoption of technology in the healthcare sector should be vigorously pursued by all stakeholders: the Regional and District Health Directorates, and the communities.

BACKGROUND

Studies have shown that improving health outcomes and promoting health equity increasingly rely on cross-sector collaborations that bring together healthcare providers, social services, and other stakeholders to address the complex factors influencing health. These cross-sector agencies are often known as Non-Governmental Organizations (NGOs), which can be local or international (WHO, 1986; WHO, 2005; WHO,2008; Smith et al., 2009; Towe et al., 2016).

Experts underscored that population health is influenced by a multitude of factors, encompassing not just individual characteristics but also broader societal and environmental elements. These include economic and social conditions, policy decisions related to healthcare and education, and the physical environments where people live, work, and interact (Booske BC, Athens JK, Kinding DA et al., 2010; Alderwick & Gottlieb, 2019). According to Alderwick, H., Hutchings, A., Briggs, A. *et* al (2021), the complex interplay of these factors influencing health outcomes is further complicated by the involvement of various stakeholders, including government agencies, social services, schools, and employers. To effectively address these factors, Alderwick, H., Hutchings, A., Briggs, A., *et* al (2021), noted that cross-sector collaborations have emerged as a promising strategy, enabling diverse organizations to pool their resources, expertise, and efforts to drive meaningful improvements in population health.

Across the world, there has been considerable evidence of international, continental, and national established partnerships between healthcare authorities and NGOs to improve health outcomes. From the international perspective, we have Doctors Without Borders/Médecins Sans Frontières (MSF), delivering emergency aid and medical care in conflict zones, epidemics, and after natural disasters, and the International Medical Corps, which offers emergency healthcare and capacity building in deprived communities worldwide, assisting the rehabilitation of overwhelmed healthcare systems. We also have others like Partners in Health (PIH), which focus on working to bring the benefits of modern medical science to those most in need in settings of poverty, focusing on strengthening local health systems, the Global Fund, Gavi, USAID, UNICEF, international institutions that provide substantial support to health-related initiatives aimed at combating diseases and improving health systems resilience, and the Bill & Melinda Gates Foundation, a giant international philanthropic force focusing on global health initiatives, including infectious diseases, maternal and child health, nutrition, and vaccine development (Gillies, P. 1998; World Health Organization, 2011; UN, 2015; Public Health Agency of Canada, World Health Organization, 2008; Shortell et al., 2002). Experts admitted that effective partnerships can take various forms, including healthcare and social services working together, broader public service collaborations, and community-led coalitions comprising diverse stakeholders. These partnerships can operate at different levels, from state or county-wide initiatives to local programs targeting specific cities or neighborhoods. Their structure can also vary, ranging from voluntary collaborations to those driven by national policy or formal mandates (Smith et al., 2009; Hayes et al, 2012; Rantala, Bortz, & Armada, 2014; Foster-Fishman et al, 2001; Roussos & Fawcett, 2000; Anderson et al, 2015). Research discovered that local and international collaboration with NGOs can bring tremendous improvements in healthcare outcomes, including effectiveness and efficiency, collaboration and coordination, sustainability and capacity building, equity and access, accountability and governance, and innovation and technology (Smith et al., 2009; Hayes et al, 2012; Rantala, Bortz, & Armada, 2014; Foster-Fishman et al, 2001; Roussos & Fawcett, 2000; Anderson et al, 2015). According to Doshmangir et al (2025), any meaningful impact of NGOs' activities on health outcomes should

involve effective collaboration between the NGOs, governments, health authorities, and beneficiary communities through the forging of strong partnerships, establishing open communication channels, and aligning objectives. These stakeholders must work through joint planning, policy development, capacity building, and strategic resource allocation to ultimately drive progress toward shared health system goals and ensure equitable access to healthcare services. Doshmangir et al (2025) further contend that with NGOs and stakeholders working together, they can easily mobilize resources and efforts to address service delivery gaps, strengthen the health workforce, improve health information systems, and access to essential medicines, and promote good governance to ultimately ensure better health outcomes for all. Patil et al. (2021) shared similar sentiments, maintaining that India benefited enormously from NGO-health stakeholders working together as one entity. In countries such as India and Kenya, non-governmental organizations (NGOs) play a crucial role in shaping health governance and leadership. They collaborate with governments to tackle pressing health issues, drive policy changes, and implement innovative solutions (Doshmangir et al., 2025). In Ghana, some NGO's have worked and are still working with health authorities and communities to improve health outcomes. Some of these NGO's include the Catholic Relief Services (CRS), working to reduce maternal and child mortality, especially in the five regions of the north, the Ghana Aids Commission (GAC), and the West Africa AIDS Foundation (WAAF) - combating HIV/AIDS to curb the menace, the Alliance for Reproductive Health Rights (ARHR) and GHS working to improve women's sexual and reproductive health, the Sightsavers, focusing on increasing access to eye care services, and BasicNeeds, working on enhancing mental health services (Hushie, M., 2016)

Health-Related Local and International NGO and Agencies in the Savannah Region

Records available at the Savannah Regional Health Directorate indicate that the following are some of the health-related NGO's and agencies that have worked or are currently working in the region: Total Family Health Organisation (TFHO), Partnering with Savana Signatures to implement a Health Marketing Activity across seven districts in the Savannah Region, focusing on family planning, maternal and child health, and malaria prevention. They also train and support Community-Based Agents (CBAs) for health education and commodity distribution; Community Development Alliance (CDA), which is into the provision of modified tricycle ambulances to support maternal health care; Society of Family Physicians, which rolled out point-of-care ultrasound services to support maternal healthcare; World Vision Ghana, which is working with the West Gonja Health Directorate to enhance healthcare delivery; World Health Organization (WHO), the United States Agency for International Development (USAID), and UNICEF which all provide equipment, medical supplies, and vaccination programs, to ensure health system resilience; GAVI, supports immunization programs and provides equipment and medical supplies to ensure health system resilience, Zomujoun Foundation, supports in online health commodities management, and Catholic Relief Services (Project Hope), with the provision of infrastructure, equipment, and medical supplies to ensure improved maternal and child health, and health system resilience. Despite their presence and impact on healthcare outcomes, research has provided limited insight into their effect on healthcare delivery indicators and outcomes in the Savannah Region of Ghana. This limited empirical evidence of the local and international NGOs' impact on healthcare delivery and its outcomes in the Savannah Region has not only limited stakeholders' appreciation and support for their programs, but is also discouraging their continued support, as most often, sustaining their support programs at the end of their tenure has become a big problem. This study aims to change the narrative by exploring partnership drivers, contributions, administration, advantages, and disadvantages of health-related NGO's activities, their impacts, and effects of local and international NGO support on healthcare delivery in the Savannah Region, while maintaining participant anonymity.

Baseline situation of key health indicators in the Savannah Region before the NGOs' interventions

Although the Savannah Region has an established Regional Maternal Task Force (RMTF), claimed to be functional, the 2023 national holistic assessment of the health sector in Ghana flagged the shortage of family planning commodities and inadequate logistics management, inadequate home visits and supervision, lack of essential medicines, acute staff attrition, inequitable distribution of nurses due to non-adherence to staffing norms, and increased cost of health commodities due to inflation as factors that contributed to the low performance of strategic health sector indicators in the Savannah Region. Specifically, the family planning acceptor rate was 23.1% and 22.3% in 2022 and 2023, respectively, compared to the national target of 40%.

Skilled deliveries in 2022 and 2023 fell below the national target of 65%. While the national benchmark is 1.2, the per capita Outpatient Department (OPD) attendance was 0.69 and 0.68 in 2022 and 2023. The percentage of ANC registrants within the first trimester dipped from 51.1% to 49.9% between 2022 and 2023, against the national target of 55%, and for 2022 and 2023, children under five years who are underweight struggled between 1.3% and 1.4% (national target, 3.8%), while Institutional Malaria Under 5 Case Fatality Rate stagnated at 0.1% against a national target of 0.08%. The 2023 national health sector Holistic Assessment report revealed that in the Savannah region, the shortage of iron supplements, low attendance at CWC after one year of age, shortage of vitamin A capsules, and late registration of pregnant women for ANC services are largely the contributors to poor maternal healthcare services. For Clinical Health Services, it has been observed that the availability of tracer medicines in the Regional Medical Stores, although increasing from 44.2% to 66% between 2022 and 2023, still fell short of the national target of 100%. Specialties, such as paediatrics, ophthalmology, urology, neurology, clinical psychology, surgery, internal medicine, and mental health (including psychiatry), are virtually unavailable in the region. In 2024, there was a significant drop in stunting assessment among children under five, which fell sharply from 90.7% in 2023 to 27.3% in 2024, a decline of 69.9%, maternal death audits decreased from 100% to 93.3%, and the institutional maternal mortality ratio also rose from 62 to 82 per 100,000 live births. In 2024, the region continued to face key challenges in clinical and emergency services, as the surgical site infection rate remained unchanged. The 2024 national holistic assessment report of the Savannah Region listed inter alia: poor family planning uptake due to myths, misconceptions, and financial barriers, late registrations, and cultural beliefs leading to low ANC attendants, no new doctors accepting postings, while some existing doctors also left the region. The report further highlighted gaps in staff training, particularly in nutrition assessments, inconsistent vaccine availability, and delayed referrals that impact patient outcomes, low antenatal care attendance, and inconsistent maternal death audits as issues affecting maternal healthcare services.

Keywords: Non-Governmental Organizations (NGOs), Savannah Region, Quality of Care, Partnerships, Ghana

Conceptual Framework (The Logic Model):

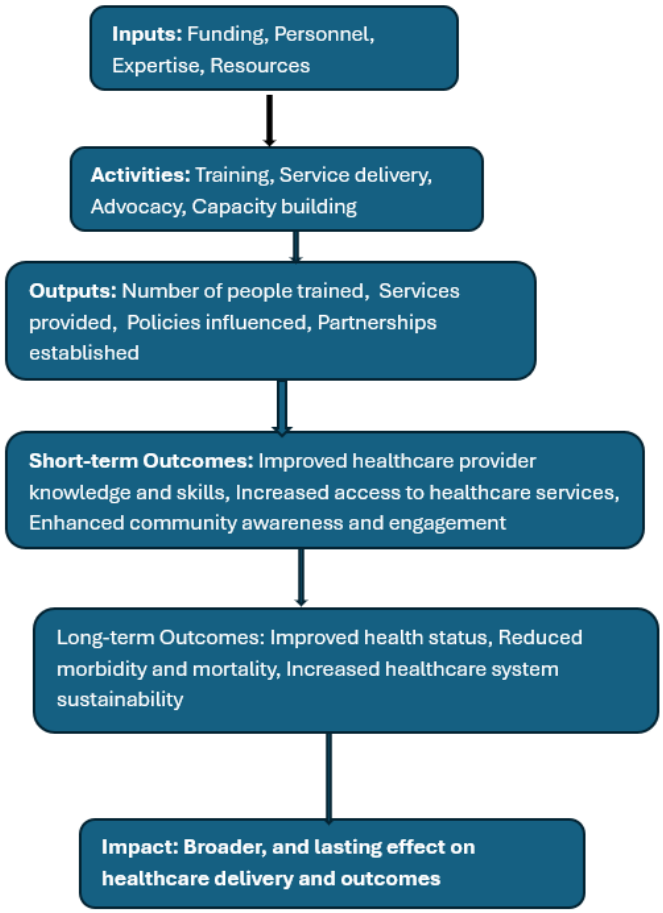

Figure 1: The Conceptual Framework (The Logic Model)

The Logic Model illustrates the flow from inputs (NGO resources) to activities (interventions) to outputs (immediate results) to outcomes (short-term and long-term changes). This progression highlights causal

relationships, demonstrating how NGO investments lead to meaningful changes in healthcare delivery and outcomes, ultimately achieving the desired impact on the target population.

Research Questions

Based on the study background, the following research questions were proposed.

1. To what extent do health-related NGO partnerships improve access to healthcare in the Savannah Region?
2. To what extent do health-related International Agencies improve the quality of healthcare in the Savannah Region?
3. To what extent do Local and International health-related Partnerships improve health outcomes in the Savannah Region?
4. What are the Challenges and Limitations associated with Local and International health-related Partnerships in the Savannah Region?
5. To what extent do Local and International health-related partnerships and Collaborations contribute to improving healthcare delivery in the Savannah Region?
6. To what extent do health-related Local and International NGOs promote Innovation and Technology in the Savannah Region?

Hypotheses

The study tested the following hypotheses in response to the research questions.

H0_1: Health-related NGO partnerships have no significant impact on improving access to healthcare in the Savannah Region.

H0_2: Health-related International Agencies have no significant impact on improving the quality of healthcare in the Savannah Region.

H0_3: Local and International health-related Partnerships have no significant impact on improving health outcomes in the Savannah Region.

H0_4: There are no significant challenges and limitations associated with Local and International health-related Partnerships in the Savannah Region.

H0_5: Local and International health-related partnerships and Collaborations have no significant contribution to improving healthcare delivery in the Savannah Region.

H0_6: Health-related Local and International NGOs have no significant impact on promoting Innovation and Technology in the Savannah Region.

METHODS

Design

A cross-sectional design with a mixed method (quantitative and qualitative) approach. A stratified random sampling technique was used to select a sample of 400 respondents from a population of 3119. A 5-point Likert-scale questionnaire, Focus Group Discussion (FGDs), and on-site document review were used for data collection. Data was analyzed using Likert Scale rubrics (ratings), SPSS version 21.0, and Secondary Medical Data Analysis. Data was descriptively and inferentially presented.

Study Population

The study population consisted of health professionals from across the region. The region has a total health professional population of 3,119, consisting of the following categories:

Table 1: Categorization of Study Population

Categories	Population Size
Clinicians	72
District Directors of Health Services	7
Nurses in all categories	1580
Public Health Professionals	550
Allied Health Staff	300
Other Health Professionals	610
Total	**3119**

Sample Size Determination

The sample for the study was determined using Slovin's sample formula: n = N / (1 + Ne2), where n = sample size, N = population size, and e = acceptable margin of error (in this case, e = 0.05). Thus, n = 400.

Sampling and Sample Determination

A stratified random sampling technique was used to select the sample. The method ensures that different subgroups within the population, such as clinicians, nurses, and other health professionals, are adequately represented in the sample. The sample proportions were calculated using the formula: Sample proportion = (Stratum size / Total population) x Sample size. Given the total population = 3119 and Sample size = 400, the table below shows the stratified samples.

Table 2: Study Sample Determination

Categories	Population	Sample Calculation	Samples
Clinicians	250	(72 / 3119) x 400	8
District Directors of Health Services	7	(7/31129) x 400	1
General Nurses & Midwives	1580	(1580 / 3119) x 400	203
Public Health Professionals	550	(550 / 3119) x 400	72
Allied Health Staff	300	(300 / 3119) x 400	38
Other Health Professionals	610	(610 / 3119) x 400	78
Total	**3119**		**400**

A simple random sampling was used to select the required number of participants from each stratum.

Inclusion and Exclusion Criteria: The study included: 1. Health staff with over 3 years of experience in the region, and 2. Community members who are part of health management committees. These groups were selected to provide insights into healthcare delivery in the region.

Data collection

The instrument was validated using Cronbach's Alpha, and a structured 5-point Likert Scale questionnaire was used to collect data.

RESULTS

The results of this study are presented under the following subheadings:

Instrument Validation

Table 3. Survey Instrument Reliability Results

S/N	Research Instrument (Scale)	Number of Items	Cronbach Alpha Coefficient
1	Access to Healthcare	7	.764
2	Quality of Care	6	.834
3	Health Outcomes	6	.776
4	Challenges and Limitations	6	.792

5	Partnership and Collaboration	6	.856
6	Innovation and Technology	5	.888
	Overall	**36**	**.818**

The results indicate that the instrument is reliable for achieving the study objectives.

Table 4: Hypothesis Testing

One-Sample Test						
Hypothesis	Test Value = .05					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
H0_1: Health-related NGO partnerships have no significant impact on improving access to healthcare in the Savannah Region.	12.832	14	.000	1.617	1.35	1.89
H0_2: Health-related International Agencies have no significant impact on improving the quality of healthcare in the Savannah Region.	6.319	14	.000	1.950	1.29	2.61
H0_3: Local and International health-related Partnerships have no significant impact on improving health outcomes in the Savannah Region.	5.358	14	.000	1.750	1.05	2.45
H0_4: There are no significant challenges and limitations associated with Local and International health-related Partnerships in the Savannah Region.	5.647	14	.000	1.817	1.13	2.51
H0_5: Local and International health-related partnerships and Collaborations have made no significant contribution to improving healthcare delivery in the Savannah Region.	8.574	14	.000	1.417	1.06	1.77
H0_6: Health-related Local and International NGOs have no significant impact on promoting Innovation and Technology in the Savannah Region.	5.647	14	.000	1.817	1.13	2.51

Given the results: H0_1: p-value = 0.000, t = 12.832, df = 14; H0_2: p-value = 0.000, t = 6.319, df = 14; H0_3: p-value = 0.000, t = 5.358, df = 14; H0_4: p-value = 0.000, t = 5.647, df = 14; H0_5: p-value = 0.000, t = 8.574, df = 14; H0_6: p-value = 0.000, t = 5.647, df = 14; since all p-values (0.000) are less than the significance level (0.05), we reject the null hypothesis for all variables and accept the alternative hypothesis. This indicates that there are statistically significant differences between the sample means and the test values, suggesting that the observed effects are unlikely to be due to chance.

Demographic Profiles

All 400 (100%) participants responded to the questionnaires. (100 %) were retrieved, and all respondents were managers of their respective local NGOs with ages ranging between 30 - 40 (60 %), 4150 (30 %), and 51 – 60 (10 %). The majority of respondents were male (70 %) and fell between 30and 40 years of age.

Table 5: Demographic Profiles

Demographic profile	**Number**	**Percentage (%)**
Sex	220	55
1. Male	180	45
2. Female	**400**	**100**
N		

Age	115	28.75
20-30years	155	38.75
31-40 years	75	18.75
41-50 years	55	13.75
51 years and above	**400**	**100**
N		
Category of Respondent	8	2.00
1. Clinician	203	50.75
2. Nurse (one of all categories)	1	0.25
3. District Director	72	18.00
4. Public health professional	38	9.50
5. Allied health staff	78	19.50
6. Other health professionals	**400**	**100.00**
N		
NGO Experience: Prior encounter with an NGO health-related activity in the Savannah Region	400	100.00
1. Yes	0	0.00
2. No	**400**	**100.00**
N		
Knowledge of health NGOs working in the Savannah Region	180	45.00
1. Respondent knows more than 10	65	16.25
2. Respondent knows between 5 and 10	155	38.75
3. Respondent knows less than 5	**400**	**100**
4. Respondent knows between one and three		
5. Respondent does not know at all		
N		

The demographic profile suggests that the majority of respondents were male (55.0%), between the ages of 31-40 years (38.75%), and nurses (50.75%). All respondents had prior experience with NGO health-related activities, and 45.00% knew more than 10 health NGOs working in the Savannah Region.

Analysis of Data

Research Question 1: To what extent do Local health-related NGO partnerships improve access to healthcare in the Savannah Region?

A survey was conducted to assess the impact of local NGOs on access to healthcare in the Savannah Region.

Table 6: Access to Health Care by Local Health-Related NGOs.

S/N	Statement	SD	D	N	A	SA	Total
1	Local NGOs have increased access to essential healthcare services in the Savannah Region	14 **3.5%**	11 **2.75%**	10 **2.5%**	137 **34.25%**	228 **57.0%**	**400** **100%**

2	Local NGO donations have improved the availability of essential medicines in the Savannah Region	3 **0.75%**	16 **4%**	6 **1.5%**	281 **70.25%**	94 **23.5%**	**400** **100%**
3	Local NGO partnerships helped Healthcare facilities in the region to have adequate equipment and infrastructure	2 **0.5%**	11 **2.75%**	25 **6.25%**	73 **18.25%**	289 **72.25%**	**400** **100%**
4	Local NGOs have reduced the distance patients travel to access healthcare services.	8 **2%**	19 **4.75%**	35 **8.75%**	90 **22.5%**	248 **62%**	**400** **100%**
5	Partnerships between the Ghana Health Service and local NGOs have improved the quality of healthcare services.	2 **0.5%**	10 **2.5%**	14 **3.5%**	143 **35.75%**	231 **57.75%**	**400** **100%**
6	Partnerships between the Ghana Health Service and local NGOs have increased the utilization of healthcare services in the region.	7 **1.75%**	38 **9.5%**	10 **2.5%**	153 **38.25%**	192 **48%**	**400** **100%**
7	Partnerships between the Ghana Health Service and local NGOs have improved pharmaceutical services in the Savannah Region.	14 **3.5%**	11 **2.75%**	10 **2.5%**	130 **32.5%**	235 **58.75%**	**400** **100%**
	Total Entries: Access to Health Care by Local Health-Related NGOs **Percentage(%)**	**50** **1.79%**	**116** **4.14%**	**110** **3.93%**	**1007** **35.96%**	**1517** **54.18%**	**2800** **100%**

The respondents reported that local NGOs have significantly improved access to essential healthcare services, with 34.25% agreeing and 57% strongly agreeing (M = 4.43, SD = .83). Specifically, the respondents attributed improved availability of essential medicines (70.25% agreeing), adequate equipment and infrastructure (72.25% strongly agreeing), and reduced distance to access healthcare services (62% strongly agreeing) to local NGO interventions. The respondents also reported that partnerships between the Ghana Health Service and local NGOs have improved the quality of healthcare services (57.75% strongly agreeing), increased utilization of healthcare services (48% strongly agreeing), and improved pharmaceutical services (58.75% strongly agreeing). The findings suggest that local NGOs play a crucial role in improving access to healthcare in the Savannah Region.

Careful analysis of the data revealed that in the Savannah Region, Local NGOs significantly boosted healthcare access in the Savannah Region. They contributed positively to the availability of essential medicines by (93.75%), with donations greatly improving supply chains. Local NGO impact also saw equipment and infrastructure for healthcare delivery significantly improved by closely (90.5%), showing that the partnerships effectively upgraded facilities. Access to healthcare services increased notably (91.25%), and pharmaceutical services improved (91.25%). Quality of healthcare services also rose (93.5%). Distance to services reduced (84.5%), and utilization of services increased (86.25%), all due to local NGO activities in the Savannah Region. Overall, local NGOs drove major improvements across indicators, particularly in medicine availability and facility upgrades by (93.75%) and (90.5%).

Regression Analysis: The extent to which Local health-related NGO partnerships improve access to healthcare in the Savannah Region.

A multiple linear regression analysis was conducted to predict Access to Healthcare Services based on seven predictor variables: Improved Pharmaceutical Services, Essential Medicines Availability, Increased Utilization, Adequate Equipment and Infrastructure, Improved Quality of Care, Reduced Distance to Health Facilities, and Increased Access. The results of the analysis are presented below.

Table 7: Model Summary

Model	R	R Square	Adjusted R-Square	Std. Error of the Estimate
1	.913[a]	.833	.830	.320

a. Predictors: (Constant), Improved Pharmaceutical Services, Essential Medicines Availability, Increased Utilization, Adequate Equipment and Infrastructure, Improved Quality of Care, Reduced Distance to Health Facilities, Increased Access

The model yielded a strong positive correlation, R = .913, and a high coefficient of determination, R^2 = .833, indicating that approximately 83.3% of the variance in improvement in the general access to healthcare services in the Savannah Region can be explained by the predictor variables (the impact of health-related local NGOs. The adjusted R^2 value of .830 suggests that the model has good predictive power. The standard error of the estimate (SEE) was .320, indicating a relatively small amount of error in the predictions. These results suggest that the model provides a good fit to the data and can be used to predict Access to Healthcare Services based on the predictor variables.

Anova Results

A one-way ANOVA was conducted to evaluate the overall fit of the regression model. The results indicated a statistically significant relationship between the predictor variables and the dependent variable, local NGOs Improve Healthcare Quality, $F(7, 392) = 279.53$, $p < .001$.

Table 8: ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	200.941	7	28.706	279.527	.000[b]
	Residual	40.256	392	.103		
	Total	241.198	399			

a. Dependent Variable: Local NGOs Improve Healthcare Quality

b. Predictors: (Constant), Improved Pharmaceutical Services, Essential Medicines Availability, Increased Utilization, Adequate Equipment and Infrastructure, Improved Quality of Care, Reduced Distance to Health Facilities, Increased Access

The F-statistic of 279.53 indicates that the regression model is a good fit to the data. The p-value (< .001) suggests that the relationship between the predictor variables and the dependent variable is statistically significant. These results indicate that the predictor variables (Improved Pharmaceutical Services, Essential Medicines Availability, Increased Utilization, Adequate Equipment and Infrastructure, Improved Quality of Care, Reduced Distance to

Health Facilities, and Increased Access) collectively explain a significant amount of variance in the dependent variable (Local NGOs Improve Healthcare Quality) in the Savannah Region.

Coefficients

The coefficients table below presents the results of the multiple linear regression analysis, including the unstandardized coefficients (B), standard errors, standardized coefficients (Beta), t-values, and p-values.

Table 9: Coefficients Results

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.354	.161		-2.191	.029
	Increased Access	.002	.136	.002	.013	.989
	Essential Medicines Availability	.687	.039	.604	17.678	.000
	Adequate Equipment and Infrastructure	.061	.055	.061	1.106	.270
	Reduced Distance to Health Facilities	-.215	.062	-.268	-3.471	.001
	Improved Quality of Care	.368	.085	.345	4.334	.000
	Increased Utilization	.146	.041	.187	3.543	.000
	Improved Pharmaceutical Services	.031	.135	.038	.230	.818
a. Dependent Variable: Local NGOs Improve Healthcare Quality						

The results indicate that Essential Medicines Availability ($\beta = .604$, $p < .001$), Improved Quality of Care ($\beta = .345$, $p < .001$), and Increased Utilization ($\beta = .187$, $p < .001$) are significant positive predictors of NGOs' improvement in healthcare quality, and Reduced Distance to Health Facilities ($\beta = -.268$, $p = .001$) is a significant negative predictor of NGOs' improvement in healthcare quality. However, Increased Access ($\beta = .002$, $p = .989$) and Improved Pharmaceutical Services ($\beta = .038$, $p = .818$) are not significant predictors of NGOs' improvement in healthcare quality. Adequate Equipment and Infrastructure ($\beta = .061$, $p = .270$) is not a significant predictor of Local NGOs' improvement of healthcare quality. These findings suggest that Local NGOs' improvement of healthcare in the Savannah Region is significantly influenced by the availability of essential medicines, quality of care, utilization of services, and distance to health facilities.

Research Question 2: To what extent do health-related International Agencies improve the quality of healthcare in the Savannah Region?

A survey was conducted to assess the impact of international health agencies on the quality of healthcare in the Savannah Region. The results are presented below:

Table 10: Improving Healthcare Outcomes by International Agencies and NGOs

S/N	Statement	SD	D	N	A	SA	Total
1	Improved clinical care quality of healthcare services **Percentage**	18 **4.5%**	32 **8%**	27 **6.75%**	145 **36.25%**	178 **44.5%**	**400** **100%**
2	Adequate training and support **Percentages**	30 **7.5%**	14 **3.5%**	7 **1.75%**	212 **53%**	137 **34.25%**	**400** **100%**
3	Enhanced clinical care capacity **Percentages**	7 **1.75%**	19 **4.75%**	15 **3.75%**	142 **35.5%**	217 **54.25%**	**400** **100%**
4	Timely and appropriate treatment **Percentages**	2 **0.5%**	7 **1.75%**	42 **10.5%**	192 **48%**	157 **39.25%**	**400** **100%**
5	Improved supervision and monitoring **Percentages**	8 **2%**	14 **3.5%**	64 **16%**	142 **35%**	172 **43%**	**400** **100%**
6	Improved Quality Care at facilities **Percentages**	2 **0.5%**	17 **4.25%**	52 **13%**	97 **24.25%**	232 **58%**	**400** **100%**
7	**International Health-related Agencies improve the quality of healthcare in the Savannah Region** **Percentages**	8 **2%**	10 **2.5%**	25 **6.25%**	174 **43.5%**	183 **54.75%**	**400** **100%**
	Total Entries: International Health Agencies **Percentages (%)**	75 **2.68%**	113 **4.04%**	232 **8.29%**	1107 **39.54%**	1276 **45.57%**	2800 **100%**

The respondents reported that international health agencies had a significant impact on improving the quality of healthcare, with 43.5% agreeing and 54.75% strongly agreeing (M = 4.38, SD = .83). Specifically, the respondents attributed improved quality of care to enhanced clinical care capacity (54.25% strongly agreeing), improved supervision and monitoring (43% strongly agreeing), and timely and appropriate treatment (39.25% strongly agreeing). The respondents also reported that adequate training and support (53% agreeing) and improved clinical care quality (44.5% strongly agreeing) were significant contributors to improved healthcare quality. The findings suggest that international health agencies play a crucial role in improving the quality of healthcare in the Savannah Region.

Overall, the data further suggests that in the Savannah Region, international Health Agencies had a significant impact on healthcare quality, enhancing clinical care capacity by 89.75% and boosting facility capabilities.

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Overall Quality improvement in the region also saw an improvement by 88.25%, while training and support improved by 87.25%, and timely, while appropriate treatment short up by (87.25%). Clinical care quality improved by (80.75%), and quality of care at facilities increased by (82.25%). Supervision and monitoring had a relatively lower impact at 78%.

Regression Analysis: The Extent to which health-related International Agencies improve the quality of healthcare in the Savannah Region

Model Summary

A multiple regression analysis was conducted to examine the relationship between healthcare quality variables and the outcome variable, as shown in the table below.

Table 11: Model Summary

Model	R	R Square	Adjusted R-Square	Std. Error of the Estimate
1	.969[a]	.938	.937	.213

a. Predictors: (Constant), Improved quality care facilities, Adequate training and support, Timely and appropriate treatment, Enhanced Clinical care capacity, Improved supervision and monitoring, Improved clinical care quality.

The model summary revealed a strong positive correlation between the predictors and the outcome variable (R = .97). The coefficient of determination (R^2 = .94) indicated that approximately 94% of the variance in the outcome variable was explained by the predictors. The adjusted R^2 (.937) suggested that the model fit the data well. The standard error of the estimate was .213, indicating a better fit of the model to the data. These results suggest that the predictors, including Improved Quality Care Facilities, Adequate Training and Support, Timely and Appropriate Treatment, Enhanced Clinical Care Capacity, Improved Supervision and Monitoring, and Improved Clinical Care Quality, are strong predictors of the impact of international healthcare-related agencies in the Savannah Region.

Anova Results

A one-way ANOVA was conducted to evaluate the relationship between the predictors and the dependent variable (International Agencies Improve Healthcare Quality), as shown in the table below.

Table 12: ANOVA

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	269.745	6	44.957	994.528	.000[b]
	Residual	17.765	393	.045		
	Total	287.510	399			

a. Dependent Variable: International Agencies improve healthcare quality

b. Predictors: (Constant), Improved quality care facilities, Adequate training and support, Timely and appropriate treatment, Enhanced Clinical care capacity, Improved supervision and monitoring, Improved clinical care quality

The results indicated a statistically significant relationship, $F(6, 393) = 994.53$, $p < .001$. The regression model explained a significant proportion of the variance in the dependent variable. These results suggest that the predictors, as a set, are strong predictors of the perceived impact of international agencies on healthcare quality in the Savannah Region.

Coefficients Results

The results of the regression coefficient analysis are shown in the Table below.

Table 12: Coefficient Results

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.430	.088		4.911	.000
	Improved clinical care quality	.298	.045	.391	6.607	.000
	Adequate training and support	-.073	.032	-.094	-2.323	.021
	Enhanced Clinical care capacity	.535	.036	.565	14.708	.000
	Timely and appropriate treatment	.259	.043	.228	6.010	.000
	Improved supervision and monitoring	.179	.043	.199	4.125	.000
	Improved quality care facilities	-.285	.038	-.301	-7.507	.000

a. Dependent Variable: International Agencies improve healthcare quality

The results revealed the following significant predictors of International Agencies Improving Healthcare Quality: Improved Clinical Care Quality ($\beta = .39$, $t = 6.61$, $p < .001$); Enhanced Clinical Care Capacity ($\beta = .57$, $t = 14.71$, $p < .001$); Timely and Appropriate Treatment ($\beta = .23$, $t = 6.01$, $p < .001$), and Improved Clinical Care Quality ($\beta = .39$, $t = 6.61$, $p < .001$). However, two predictors: Adequate Training and Support ($\beta = -.09$, $t = -2.32$, $p = .021$), and Improved Quality Care Facilities ($\beta = -.30$, $t = -7.51$, $p < .001$) had negative coefficients. These results suggest that increased Enhanced Clinical Care Capacity and Improved Clinical Care Quality are the strongest predictors of perceived improvement in healthcare quality attributed to international agencies.

Research Question 3: To what extent do Local and International health-related Partnerships improve health outcomes in the Savannah Region?

A survey was conducted to assess the impact of joint local and international partnerships on health outcomes in the Savannah Region.

Table 13: Impact of Joint Local and International Partnerships on Health Outcomes in the Savannah Region.

S/N	Statement	SD	D	N	A	SA	Total
1	Reduction in mortality rates	10	25	33	100	232	**400**
	Percentages	**2.5**	**6.25**	**8.25**	**25**	**58**	**100**
2	Improved Health Status	2	2	5	161	230	**400**
	Percentages	**0.5**	**0.5**	**1.25**	**40.25**	**57.5**	**100**
3	Improved the management of chronic diseases	8	36	32	184	140	**400**
	Percentages	**2.0**	**9.0**	**8.0**	**46**	**35**	**100**
4	Improved Maternal and child health outcomes	28	12	12	107	241	**400**
	Percentages	**7.0**	**3.0**	**3.0**	**26.75**	**60.75**	**100**
5	Reduction in the incidence of infectious diseases	14	8	26	57	295	**400**
	Percentages	**3.5**	**2.0**	**6.5**	**14.25**	**73.75**	**100**
6	Improved well-being of the population	2	27	16	217	138	**400**
	Percentages	**0.5**	**6.75**	**4.0**	**54.25**	**34.5**	**100**
7	**Local and International health-related Partnerships improve health outcomes in the Savannah Region**	2	6	18	280	94	**400**
	Percentages	**0.5**	**1.5**	**4.5**	**70**	**23.5**	**100**
	Total Entries: joint local and international partnerships (NGOs)	**66**	**116**	**142**	**1106**	**1370**	**2800**
	Percentages (%)	**0.5**	**6.75**	**4.0**	**54.25**	**34.5**	**100**

The respondents reported significant improvements in health outcomes, with 25% agreeing and 58% strongly agreeing that there was a reduction in mortality rates (M = 4.31, SD = 0.93). Additionally, 40.25% agreed, and 57.5% strongly agreed that there was an improvement in health status (M = 4.54, SD = 0.60). The respondents also attributed improvements in the management of chronic diseases (46% agreeing and 35% strongly agreeing, M = 4.14, SD = 0.85), maternal and child health outcomes (26.75% agreeing and 60.75% strongly agreeing, M = 4.33, SD = 1.02), and reduction in infectious diseases (14.25% agreeing and 73.75% strongly agreeing, M = 4.59, SD = 0.80) to joint local and international partnerships. Furthermore, the respondents agreed that partnerships improved the well-being of the population (54.25% agreeing and 34.5% strongly agreeing, M = 4.22, SD = 0.72) and that local and international health-related partnerships improve health outcomes in the Savannah Region (70% agreeing and 23.5% strongly agreeing, M = 4.16, SD = 0.59). The findings suggest that joint local and international partnerships play a crucial role in improving health outcomes in the Savannah Region (M = 4.29, SD = 0.79).

Regression Analysis: Perceived impact of local and international health-related partnerships from NGO's and agencies on health outcomes in the Savannah Region

Model Summary

A multiple regression analysis was conducted to examine the relationship between health outcome variables and the dependent variable.

Table 14: Model Summary

Model	R	R Square	Adjusted R-Square	Std. Error of the Estimate
1	.865[a]	.749	.745	.305

a. Predictors: (Constant), Improved Population Wellbeing, Improved Health Status, Improved Chronic Disease Management, Reduced Infectious Disease Incidence, Improved Maternal Child Health, Reduced Mortality

The model summary revealed a strong positive correlation between the predictors and the dependent variable (R = .87). The coefficient of determination (R^2 = .75) indicated that approximately 75% of the variance in the dependent variable was explained by the predictors. The adjusted R^2 (.745) suggested that the model fit the data well. The standard error of the estimate was .305, which suggests that the model's predictions are reasonably accurate, with a moderate level of error.

Analysis Of Variance (ANOVA)

A one-way ANOVA was conducted to evaluate the relationship between the predictors (Improved Population Wellbeing, Improved Health Status, Improved Chronic Disease Management, Reduced Infectious Disease Incidence, Improved Maternal Child Health, and Reduced Mortality) and the dependent variable (Local and International Partnerships Improve Health Outcomes).

Table 15: ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	109.029	6	18.171	195.328	.000[b]
	Residual	36.561	393	.093		
	Total	145.590	399			

a. Dependent Variable: Local and International Partnerships Improve Health Outcomes

b. Predictors: (Constant), Improved Population Wellbeing, Improved Health Status, Improved Chronic Disease Management, Reduced Infectious Disease Incidence, Improved Maternal Child Health, Reduced Mortality

The results indicated a statistically significant relationship, $F(6, 393) = 195.33$, $p < .001$, suggesting that the predictors, as a set, are strong predictors of the perceived impact of local and international partnerships on health outcomes.

Table 16: Coefficients: Local and International Partnerships Improve Health Outcomes

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.280	.160		1.749	.081
	Reduced Mortality	.294	.071	.499	4.125	.000
	Improved Health Status	.446	.054	.446	8.206	.000
	Improved Chronic Disease Management	.261	.045	.355	5.853	.000
	Improved Maternal Child Health	.185	.055	.349	3.355	.001
	Reduced Infectious Disease Incidence	.110	.045	.175	2.455	.015
	Improved Population Wellbeing	.581	.040	.792	14.583	.000
a. Dependent Variable: Local and International Partnerships Improve Health Outcomes						

A multiple regression analysis was conducted to examine the relationship between health outcomes and the perceived impact of local and international partnerships. The results indicated that the predictors collectively explained a significant amount of variance in perceived partnership impact. Specifically, improved population wellbeing ($\beta = .79$, $t = 14.58$, $p < .001$), improved health status ($\beta = .45$, $t = 8.21$, $p < .001$), improved chronic disease management ($\beta = .36$, $t = 5.85$, $p < .001$), reduced mortality ($\beta = .50$, $t = 4.13$, $p < .001$), improved maternal child health ($\beta = .35$, $t = 3.36$, $p = .001$), and reduced infectious disease incidence ($\beta = .18$, $t = 2.46$, $p = .015$) were all significant predictors of perceived partnership impact.

The results suggest that these health outcomes are important drivers of the perceived effectiveness of local and international partnerships in improving health outcomes. The strongest predictor was improved population wellbeing, indicating that partnerships that focus on enhancing overall population wellbeing are likely to have a greater perceived impact. The findings have implications for policymakers and practitioners seeking to optimize the impact of partnerships on health outcomes. By prioritizing initiatives that improve population well-being, health status, and disease management, partnerships can potentially achieve greater perceived impact and improve health outcomes in the long run.

Research Question 4: What are the Challenges and Limitations associated with Local and International health-related Partnerships in the Savannah Region?

A survey was conducted to assess the challenges and limitations faced by NGOs in the Savannah Region.

Table 17: Challenges and limitations faced by NGOs in the Savannah Region

S/N	**Statement**	**SD**	**D**	**N**	**A**	**SA**	**Total**
1	Funding constraints	7	13	15	260	105	400
	Percentages	**1.75**	**3.25**	**3.75**	**65**	**26.25**	**100**

2	Operational challenges of coordination **Percentage**	20 **5.00**	20 **5.00**	10 **2.5**	182 **45.5**	168 **42**	400 **100**
3	Lack of existing health infrastructure and equipment **Percentages**	10 **2.5**	24 **6**	17 **4.25**	260 **65**	89 **22.25**	400 **100**
4	Staff shortages and turnover **Percentages**	22 **5.5**	18 **4.5**	29 **7.25**	160 **40**	171 **42.75**	400 **100**
5	Inadequate community engagement and participation **Percentages**	15 **3.75**	12 **3**	13 **3.25**	104 **26**	256 **64**	400 **100**
6	Poor Monitoring and Evaluation **Percentages**	14 **3.5**	16 **4**	10 **2.25**	106 **26.5**	254 **63.5**	400 **100**
7	Challenges and Limitations affect the NGO's impact in the Savannah Region **Percentages**	14 **3.5**	9 **2.25**	18 **4.5**	168 **42**	191 **47.75**	400 **100**
	Total Entries: challenges and limitations **Percentages (%)**	102 **3.64**	112 **4.00**	112 **4.00**	1240 **44.29**	1234 **44.07**	2800 **100**

The respondents ranked funding constraints as a major challenge, with 65% agreeing and 26.25% strongly agreeing (M = 4.13, SD = .93). Operational challenges of coordination were also significant, with 45.5% agreeing and 42% strongly agreeing (M = 4.20, SD = 1.03). Lack of existing health infrastructure and equipment was another major challenge, with 65% agreeing and 22.25% strongly agreeing (M = 4.08, SD = .94). Staff shortages and turnover were also a concern, with 40% agreeing and 42.75% strongly agreeing (M = 4.11, SD = 1.08). The respondents also reported inadequate community engagement and participation (64% strongly agreeing), poor monitoring and evaluation (63.5% strongly agreeing), and challenges and limitations affecting the NGO's impact (47.75% strongly agreeing). The overall ranking of challenges and limitations was: 1. Inadequate community engagement and participation (M = 4.47, SD = .89); 2. Poor monitoring and evaluation (M = 4.44, SD = .92); 3. Funding constraints (M = 4.13, SD = .93); 4. Lack of existing health infrastructure and equipment (M = 4.08, SD = .94); 5. Staff shortages and turnover (M = 4.11, SD = 1.08), and 6. Operational challenges of coordination (M = 4.20, SD = 1.03)

Regression Analysis: Challenges and Limitations Faced by NGOs in the Savannah Region

A multiple regression analysis was conducted to examine the relationship between various challenges and limitations faced by NGOs in the Savannah Region.

Table 18: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.965[a]	.932	.930	.243

a. Predictors: (Constant), Poor Monitoring and Evaluation, Funding Constraints, Operational Challenges of Coordination, Staff shortage and turnover, Lack of Health infrastructure and equipment, Inadequate Community Engagement and Participation

The model summary indicates that the predictors explained a significant amount of variance in the outcome variable (R^2 = .932, Adjusted R^2 = .930, F(6, 393) = 890.99, p < .001). The model had a strong positive relationship with the outcome variable (R = .965). The standard error of the estimate was .243, indicating a relatively small amount of error in the predictions.

ANOVA

An analysis of variance (ANOVA) was conducted to evaluate the overall fit of the regression model.

Table 19: ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	315.858	6	52.643	890.992	.000[b]
	Residual	23.220	393	.059		
	Total	339.077	399			

a. Dependent Variable: Totality: Impact of Challenges and Limitations

b. Predictors: (Constant), Poor Monitoring and Evaluation, Funding Constraints, Operational Challenges of Coordination, Staff Shortage and Turnover, Lack of Health Infrastructure and Equipment, Inadequate Community Engagement and Participation

The ANOVA results indicate that the regression model was significant, F(6, 393) = 890.99, p < .001. The model explained a significant amount of variance in the dependent variable, Totality of Challenges and Limitations. This implies that the challenges faced by NGOs in the Savannah Region are significantly influenced by the predictors. The p-value (< .001) indicates that the relationship is statistically significant, suggesting that these factors are crucial in understanding the challenges faced by NGOs in the region.

Table 20: Coefficients:

A multiple regression analysis was conducted to examine the relationship between various challenges faced by NGOs in the Savannah Region and the totality of challenges and limitations.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.116	.082		1.424	.155
	Funding Constraints	.186	.038	.143	4.954	.000
	Operational Challenges of Coordination	.050	.047	.050	1.080	.281
	Lack of Health infrastructure and equipment	.109	.050	.101	2.185	.030
	Staff shortage and turnover	.290	.037	.341	7.949	.000
	Inadequate Community Engagement and Participation	.294	.054	.293	5.422	.000

	Poor Monitoring and Evaluation	.269	.032	.285	8.508	.000
a. Dependent Variable: Totality: Impact of Challenges and Limitations						

The coefficients indicate that all predictors are statistically significant: Funding Constraints (β = .143, t = 4.954, p < .001) was a significant predictor of Totality Challenges and Limitations. Lack of Health Infrastructure and Equipment was a statistically significant predictor of Totality Challenges and Limitations, β = .101, t(393) = 2.185, p = .030. Staff Shortage and Turnover (β = .341, t = 7.949, p < .001) was a significant predictor. Inadequate Community Engagement and Participation (β = .293, t = 5.422, p < .001) was a significant predictor. Poor Monitoring and Evaluation (β = .285, t = 8.508, p < .001) was a significant predictor. Operational Challenges of Coordination (β = .050, t = 1.080, p = .281) was not a significant predictor. The results imply that Funding Constraints, Staff Shortage and Turnover, Inadequate Community Engagement and Participation, and Poor Monitoring and Evaluation. Significantly contribute to the totality of challenges and limitations facing NGOs in the region. From the results, Staff Shortage and Turnover have the strongest impact (β = .341), followed by Inadequate Community Engagement and Participation (β = .293), and Poor Monitoring and Evaluation (β = .285), with the Lack of Health Infrastructure and Equipment (β = .101), while Operational Challenges of Coordination (β = .50), being the least and not a significant predictor.

Research Question 5: To what extent do Local and International health-related partnerships and Collaborations contribute to improving healthcare delivery in the Savannah Region?

Table 21: Impact of local and international health-related partnerships and collaborations in the Savannah Region.

This survey assessed the impact of local and international health-related partnerships and collaborations in the Savannah Region.

S/N	Statement	SD	D	N	A	SA	Total
1	Fostered effective collaboration between health stakeholders	10	19	30	168	173	**400**
	Percentages	**2.5**	**4.75**	**7.2**	**42**	**43.25**	**100**
2	Resulted in Resilient healthcare facilities	14	20	39	110	217	**400**
	Percentages	**3.5**	**5**	**9.75**	**27.5**	**54.25**	**100**
3	Quick respond to the health needs of the local communities	4	15	21	178	182	**400**
	Percentages	**1**	**3.75**	**5.25**	**44.5**	**45.5**	**100**
4	Have promoted the sharing of resources and expertise	24	20	11	195	150	**400**
	Percentages	**6**	**5**	**2.75**	**48.75**	**37.5**	**100**
5	Have contributed to health policy development and implementation	15	8	10	109	258	**400**
	Percentages	**3.75**	**2**	**2.5**	**27.25**	**64.5**	**100**
6	Resulted in a sustainable, long-lasting impact	8	29	28	101	234	**400**
	Percentage	**2**	**7.25**	**7**	**25.25**	**58.5**	**100**

7	Local and International health-related partnerships and Collaborations contribute to improving healthcare delivery in the Savannah Region. **Percentage**	27 **6.75**	19 **4.75**	25 **6.25**	188 **47**	141 **35.25**	**400** **100**
	Total Entries: Local and International health-related partnerships and Collaborations **Percentages (%)**	102 **3.64**	111 **3.96**	164 **6.25**	1049 **47**	1355 **35.25**	**2800** **100**

The results revealed that respondents generally agreed that these partnerships have fostered effective collaboration between health stakeholders (M = 4.21, SD = 0.93), strengthened the capacity of healthcare facilities (M = 4.24, SD = 0.99), and responded to the health needs of local communities (M = 4.30, SD = 0.81). Additionally, respondents agreed that these partnerships have promoted the sharing of resources and expertise (M = 4.08, SD = 1.03) and contributed to health policy development and implementation (M = 4.45, SD = 0.93). Overall, the respondents perceived that local and international health-related partnerships and collaborations have resulted in a sustainable, long-lasting impact (M = 4.33, SD = 0.96) and contribute to improving healthcare delivery in the Savannah Region (M = 4.13, SD = 0.95). These findings suggest that partnerships and collaborations are essential for improving healthcare outcomes in the region. The respondents' agreement with the statements indicates a positive perception of the impact of these partnerships, highlighting their potential for driving positive change in the healthcare sector.

Regression Analysis

A multiple regression analysis was conducted to examine the relationship between health partnerships and healthcare delivery outcomes in the Savannah Region.

Table 22: Model Summary

Model	R	R Square	Adjusted R-Square	Std. Error of the Estimate
1	.978[a]	.957	.956	.231

a. Predictors: (Constant), Sustainable Impacts, Quick Response, Health Policy Development and Implementation, Resources and Expertise Sharing, Resilient Health Facilities, Effective Collaboration

The results indicate that the regression model was significant, with a strong positive relationship between the predictors and the outcome variable. The model explained 95.6% of the variance in the outcome variable (R^2 = .957, adjusted R^2 = .956). The standard error of the estimate was 0.231. (R = .978).

Analysis of Variance (ANOVA)

Table 23: ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	463.975	6	77.329	1446.977	.000[b]
	Residual	21.003	393	.053		
	Total	484.977	399			

a. Dependent Variable: Improved Health Care Delivery

b. Predictors: (Constant), Sustainable Impacts, Quick Response, Health Policy Development and Implementation, Resources and Expertise Sharing, Resilient Health Facilities, Effective Collaboration

The ANOVA results show that the regression model was significant, $F(6, 393) = 1446.98$, $p < .001$, indicating that the predictors significantly predicted Improved Health Care Delivery.

Table 24: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.016	.073		-.222	.825
	Effective Collaboration	.125	.053	.107	2.374	.018
	Resilient Health Facilities	.302	.047	.287	6.414	.000
	Quick Response	-.166	.047	-.122	-3.552	.000
	Resources and Expertise Sharing	.801	.035	.776	23.146	.000
	Health Policy Development and Implementation	-.100	.032	-.085	-3.101	.002
	Sustainable Impacts	.025	.045	.023	.553	.580

a. Dependent Variable: Improved Health Care Delivery

The results indicate that Resources and Expertise Sharing ($\beta = .776$, $p < .001$) and Resilient Health Facilities ($\beta = .287$, $p < .001$) were significant predictors of Improved Health Care Delivery. Effective Collaboration ($\beta = .107$, $p = .018$) also positively predicted Improved Health Care Delivery. Quick Response ($\beta = -.122$, $p < .001$) negatively predicted Improved Health Care Delivery, suggesting that quicker responses may not always yield better outcomes. Health Policy Development and Implementation ($\beta = -.085$, $p = .002$) negatively predicted Improved Health Care Delivery, indicating potential issues with policy implementation or effectiveness, and Sustainable Impacts ($\beta = .023$, $p = .580$) did not significantly predict Improved Health Care Delivery. The results show that with the activities of local and international NGOs and agencies in areas of Resources and Expertise Sharing, Resilient Health Facilities, and Effective Collaboration positively impact Improved Health Care Delivery, while efforts towards Quick Response and Health Policy Development and Implementation did not impact Improved Health Care Delivery, suggesting potential issues with their implementation or effectiveness, generally, sustainable impacts from the activities towards Improved Health Care Delivery are not being felt as expected.

Research Question 6: To what extent do health-related Local and International NGOs promote Innovation and Technology in the Savannah Region?

The survey assessed the impact of NGOs' promotion of innovation and technology in the healthcare sector in the Savannah Region.

Table 25: NGOs' promotion of innovation and technology in the healthcare sector in the Savannah Region.

S/N	Statement	SD	D	N	A	SA	Total
1	Have promoted the adoption of digital health technologies	14 **3.5**	11 **2.75**	10 **2.5**	137 **34.25**	228 **57**	**400** **100**
2	Has resulted in improved and sustainable financial mechanisms	3 **0.75**	16 **4**	5 **1.25**	281 **70.25**	95 **23.75**	**400** **100**
3	Have facilitated the scale-up of healthcare innovations.	2 **0.5**	11 **2.75**	15 **3.75**	73 **18.25**	299 **74.75**	**400** **100**
4	Resulted in improved e-health delivery	8 **2**	19 **4.75**	35 **8.75**	90 **22.50**	248 **62**	**400** **100**
5	Have facilitated the use of data analytics to inform healthcare decision-making.	2 **0.2**	10 **2.4**	14 **3.5**	143 **35.75**	231 **57.75**	**400** **100**
6	**Health-related Local and International NGOs promote Innovation and Technology in the Savannah Region**	7 **1.75**	18 **4.5**	10 **2.5**	153 **38.25**	212 **53.0**	**400** **100**
	Total Entries: Innovation and Technology **Percentages (%)**	36 **1.5**	85 **3.54**	89 **3.71**	877 **36.54**	1313 **54.71**	**2400** **100**

The results indicate that respondents generally agreed that local and international NGOs have promoted the adoption of digital health technologies (M = 4.39, SD = 0.83), facilitated the scale-up of healthcare innovations (M = 4.64, SD = 0.63), and resulted in improved digital health technologies (M = 4.45, SD = 0.83). Additionally, respondents agreed that these NGOs have facilitated the use of data analytics to inform healthcare decision-making (M = 4.50, SD = 0.67) and promote innovation and technology in the region (M = 4.36, SD = 0.80). In a nutshell, the respondents opined that innovation and technology have had a positive impact on the healthcare sector in the Savannah Region. The high means and low standard deviations indicate a strong agreement among respondents that NGOs are playing a crucial role in promoting innovation and technology, improving digital health technologies, and facilitating the use of data analytics. These findings highlight the importance of NGO's role in supporting innovation and technology in driving positive change in healthcare delivery in the Savannah Region.

Regression Analysis

A multiple regression analysis was conducted to examine the relationship between healthcare predictors and the outcome variable.

Table 26: Model Summary

Model	R	R Square	Adjusted R-Square	Std. Error of the Estimate
1	.904[a]	.817	.815	.359

a. Predictors: (Constant), Data Driven Decision-making, Sustainable Financial Mechanisms, Health Care Innovations, Improved e-healthcare, Digital Health Technologies

The model explained 81.5% of the variance in the outcome variable (adjusted $R^2 = .815$), with a strong positive relationship between the predictors and the outcome variable ($R = .904$).

Analysis Of Variance (ANOVA)

Table 27: ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	226.537	5	45.307	351.814	.000[b]
	Residual	50.740	394	.129		
	Total	277.278	399			

a. Dependent Variable: Promotion of Health Innovation and Technology

b. Predictors: (Constant), Data Driven Decision Making, Sustainable Financial Mechanisms, Health Care Innovations, Improved ehealthcare, Digital Health Technologies

The ANOVA results indicate that the regression model was significant, $F(5, 394) = 351.81$, $p < .001$, indicating that the predictors significantly predicted the Promotion of Health Innovation and Technology.

Table 28: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-1.054	.188		-5.598	.000
	Digital Health Technologies	.460	.048	.437	9.671	.000
	Sustainable Financial Mechanisms	.304	.037	.263	8.161	.000
	Health Care Innovations	.213	.054	.148	3.950	.000
	Improved ehealthcare	.050	.035	.046	1.455	.146
	Data Driven Decision Making	.192	.045	.133	4.252	.000

a. Dependent Variable: Promotion of Health Innovation and Technology

The results indicate that Digital Health Technologies ($\beta = .437$, $p < .001$) was the strongest predictor of Promotion of Health Innovation and Technology, Sustainable Financial Mechanisms ($\beta = .263$, $p < .001$), and

Health Care Innovations (β = .148, p < .001) and Data-Driven Decision Making (β = .133, p < .001) positively predicted Promotion of Health Innovation and Technology, also predicted Promotion of Health Innovation and Technology, but were not as strong as digital health technologies. E-Health Care (β = .046, p = .146), however, did not significantly lead to the Promotion of Health Innovation and Technology.

DISCUSSION

The study discovered that, regarding improved access to healthcare, local NGOs have significantly improved access to essential healthcare services by R^2 =83.3%; F(7, 392) = 279.53, p < .001). However, while the availability of essential medicines has improved significantly, people still face problems with the utilization of healthcare facilities due to their long distances from some settlements in the region. These findings were similar to those of (Gillies, P. 1998; World Health Organization, 2011; UN, 2015; Public Health Agency of Canada, World Health Organization, 2008; Shortell et al., 2002; Booske BC, Athens JK, Kinding DA et al., 2010; Alderwick & Gottlieb, 2019; Alderwick, H., Hutchings, A., Briggs, A. *et* al, 2021), who various find the same in their respective studies. The findings suggest that although local NGOs play a crucial role in improving access to healthcare in the Savannah Region, especially concerning the availability of essential medicines, their efforts are being marginalized due to the long distances of health facilities from settler populations. This highlights the need for stakeholders (GHS and the Savannah Regional Health Directorate) to consolidate the prioritization of essential medicines availability, quality of care, and general utilization of services to improve healthcare outcomes.

The study also found that international health agencies had a significant impact on improving the quality of healthcare, with an average score of 98.25%, R-squared = 93.8, and F(6, 393) = 994.53, p < .001, with enhanced Clinical Care Capacity, Improved Clinical Care Quality, and Timely and Appropriate Treatment seeing impressive improvements. The study further discovered that international health agencies can do much better if they prioritize investments in capacity building, quality improvement initiatives, and clinical care services. These findings resonate with the findings of Patil et al. (2021; Smith et al., 2009; Hayes et al., 2012; Rantala, Bortz, & Armada, 2014; Foster-Fishman et al, 2001; Roussos & Fawcett, 2000; Anderson et al., 2015; Doshmangir et al., 2025), in their studies. The findings indicate that international health agencies play a crucial role in improving healthcare quality in the Savannah Region, with capacity building, quality of care, and strategic investments being key areas of focus. Specifically, enhancing clinical care capacity, improving clinical care quality, and ensuring timely and appropriate treatment are essential for enhancing healthcare outcomes. To improve healthcare outcomes, stakeholders should prioritize investments in capacity building, quality improvement initiatives, and clinical care services, ultimately strengthening the healthcare system in the Savannah Region.

Regarding the extent to which Local and International health-related Partnerships improve health outcomes in the Savannah Region, the study discovered that there had been significant improvements in health outcomes, with the ANOVA F(6, 393) = 195.33, p < .001, suggesting that the predictors, as a set, are strong predictors, and the regression model explaining 74.9% (R-squared =74.9%) of the variance in the dependent variable. Reduced mortality rates, improved health status, and improved management of chronic diseases showed a significantly strong positive correlation with the outcome variable. These findings aligned with the findings of (Rantala, Bortz, & Armada, 2014; Foster-Fishman et al, 2001; Alderwick, H., Hutchings, A., Briggs, A. *et* al, 2021), in their respective studies. The findings suggest that joint local and international partnerships are indispensable to improving health outcomes in the Savannah Region. These significant impacts, especially in population wellbeing, chronic diseases management, and the health status of the population, need to be further prioritized, as they have serious overall health improvement implications for policymakers and practitioners, and highlight the need for stakeholders to commit to initiatives that improve population wellbeing, health status, and disease management to optimize the impact of partnerships on health outcomes.

Regarding the challenges and limitations of local NGOs and international agencies working in the Savannah Region, the study uncovers funding constraints, operational challenges, lack of health infrastructure and equipment, staff shortages and turnover, inadequate community engagement and participation, and poor monitoring and evaluation as significant challenges. This was proven by the regression model, which showed that 93.2% of the variance in the outcome variable is explained by the independent variables (the predictors),

supported by the ANOVA results*: F(6, 393) = 890.99, p < .00, as found in the following studies* (Rantala, Bortz, & Armada, 2014; Foster-Fishman et al, 2001; Alderwick, H., Hutchings, A., Briggs, A. *et* al, 2021). The findings suggest that indeed, NGOs in the Savannah Region face significant challenges that impact their effectiveness. The findings call for policymakers, practitioners, and donors to highlight the need to prioritize staff capacity building, community engagement, monitoring and evaluation, and resource management to support local and international NGO's and agencies' effectiveness in the Savannah Region.

With collaboration and partnership, the study found a strong positive relationship between the predictors and the outcome variable, with the model summary recording an R-squared of 95.6% of the variance in the outcome variable ($R^2 = .957$, adjusted $R^2 = .956$), being explained by the predictors. The ANOVA results, *F(6, 393) = 1446.98, p < .001,* have also shown that the predictors significantly predicted the outcome. Although the findings suggest that local and international health-related partnerships and collaborations are essential for improving healthcare outcomes in the Savannah Region, interestingly, the coefficient results have shown that while resource and expertise sharing, health facility resilience, and collaboration among stakeholders are doing very well, quick response to community health needs and health policy development and implementation needs a revamp, and invite policymakers, practitioners, and stakeholders, to premium and prioritize emergency response and policy development and implementation to improve healthcare delivery in the Savannah Region.

Concerning the impact of health-related local and international NGOs on promoting innovation and technology in the Savannah Region, the study discovered that these organizations have promoted the adoption of digital health technologies, facilitated the scale-up of healthcare innovations, and improved e-health delivery, with the ANOVA results indicating that the regression model was significant, $F(5, 394) = 351.81$, $p < .001$, demonstrating that the predictors significantly predicted the Promotion of Health Innovation and Technology by health-related local and international NGOs. The regression model explains 81.5% of the variance in the outcome variable, indicating a strong positive relationship between all the predictors and the outcome variable. The findings suggest that health-related local and international NGOs play a crucial role in promoting innovation and technology in the healthcare sector in the Savannah Region. For policy direction, the findings place a responsibility on policymakers, practitioners, and stakeholders to prioritize investments in digital health technologies, sustainable financial mechanisms, healthcare innovations, and data-driven decision-making to promote innovation and technology in the healthcare sector in the Savannah Region.

Qualitative Dimensions: Focus Group Discussions (FGDs) and On- site Impact Assessment: NGO Interventions in the Savannah Region

Focus Group Discussions (FGDs) and On- site Impact Assessment with documentary evidence indicate that the intervention of health-related local and international NGOs in the Savannah Region in addressing critical healthcare gaps has yielded some positive results. For example, Maternal and Child Health, all districts recorded increased Family Planning Acceptor Rates, between 22.3% (2023) to 32.3% (2025), approaching the national target of 40%. Skilled Deliveries also improved slightly to around 66% in 2025, exceeding the national target by a percentage point. ANC Registrants (1st Trimester) saw an average district increase from 49.9% (2023) to 50.2 % (2025), inching narrowly above the national target of 55%. The percentage of underweight children <5 dropped from 1.4% (2023) to 0.62% (2025), outperforming the national target of 3.8%. Institutional Malaria Under 5 Case Fatality Rate reduced from 0.1% (2023) to 0.055% (2025), approaching the national target of 0.08%. These achievements, according to respondents, were made possible chiefly by the Zomujoun Foundation, the Catholic Relief Services (CRS), the Community Development Alliance (CDA), GAVI, USAID, and UNICEF. Concerning Clinical Health Services, Tracer Medicines Availability (TMA) increased from 66% (2023) to 70.8% (2025), which is encouraging, thanks to GAVI, CRS, and the USAID. On improvements in emergency services, there is evidence that GAVI, UNICEF, the Zomujoun Foundation, the Catholic Relief Services (CRS), and Community Development Alliance (CDA) have all contributed to achieving a reduced surgical site infection rate by 30% through improved infection control measures. Regarding Healthcare System Strengthening (HSS), there is ample evidence which supported staff training (Capacity Building) by the Catholic Relief Services (CRS) in nutrition assessment, thus enhancing service quality. In terms of infrastructure development and improvement, CRS has contributed to the renovation of 5 CHPS compounds across the region, which have improved service delivery. For health commodities and logistics management, Zomujoun Foundation, the Catholic Relief Services (CRS), and Community Development Alliance (CDA), through their

specific interventions, have improved supply chain management, reducing stockouts of essential medicines by almost 40%. For referrals, the CRS and the CDA have contributed to the provision of Motor-Tricycle Ambulances, especially in the West, Central, and North Gonja and Bole Districts, to facilitate maternal healthcare services. Perhaps, massive improvements in maternal Healthcare were attributed to the impact of the interventions of the Society of Family Physicians, which rolled out point-of-care ultrasound services to support maternal healthcare, the CDA for their Community Motor- Tricycle Ambulances, and the CRS for providing Ultrasound machines, radiant warmers, and incubators, especially to facilities in the West and North Gonja Districts.

For Community Engagement and Awareness (CEA), all the NGOs were applauded for their impactful interventions, which saw a sharp increase in awareness on family planning, ANC, and child nutrition through community outreach programs, and the training of over 200 Community Health Workers (CHWs), thus enhancing community-level service delivery.

In terms of boosting transportation, available records at the Regional Health Directorates' transport unit and physical inspections at the districts revealed that collectively, WHO, USAID, GAVI, UNOPS, and UNICEF had donated more than 350 motorbikes to support healthcare delivery.

Notwithstanding these positive impacts of the health-related local and international NGOs in the Savannah region, participants during the FGDs and on-site engagements highlighted some key challenges that must be addressed. Pharmacists, nurses, and some clinicians spoke of the inconsistent vaccine supply to ensure higher immunization coverage. Clinicians and Nurses additionally highlighted referral difficulties, especially in areas not covered by the NGOs. They admitted that, despite some improvements in maternal healthcare, with the overall institutional maternal mortality ratio decreasing, the consistency with maternal death audits is still an issue. They also bemoaned the non-availability of specialty services, especially in pediatrics, ophthalmology, urology, and psychiatry, among others.

CONCLUSIONS, RECOMMENDATIONS, AND FUTURE DIRECTIONS

This study evaluated the impact of activities of local and international NGO's and agencies on Healthcare Delivery in Low-Resource Settings, with a focus on the case of the Savannah Region.

Conclusion

The study provides valuable insights into the impact of local and international NGOs and agencies on healthcare outcomes in the Savannah Region. The findings suggest that:

1. Local NGOs have significantly improved access to essential healthcare services, but face challenges related to distance and utilization of healthcare facilities. Local health-related NGOs have made significant strides in improving access to essential healthcare services in the Savannah Region, particularly in hard-to-reach areas. Their efforts have likely focused on setting up clinics, mobile health services, and outreach programs, which have helped bridge the gap in healthcare access. Additionally, they have conducted community health education on antenatal care, family planning, and nutrition, among other topics, to raise awareness and promote healthy practices. However, despite these efforts, challenges related to distance and utilization of healthcare facilities persist, highlighting the need for continued support and innovative solutions. The impact of local NGOs can be seen in various aspects of healthcare delivery, including increased skilled delivery rates through outreach and facility-based services, improved antenatal care attendance through community mobilization, and enhanced community engagement through trained Community Health Workers. These efforts have contributed to improved health outcomes, particularly in vulnerable populations such as mothers and children. Areas such as Bole, Central Gonja, Sawla-Tuna-Kalba, and West Gonja districts have benefited from these interventions. Overall, local NGOs have played a crucial role in shaping the healthcare landscape in the Savannah Region, and their continued efforts are essential to achieving better health outcomes.

2. International health agencies have a significant impact on improving healthcare quality, with capacity building, quality of care, and strategic investments being key areas of focus. International health agencies

have been instrumental in enhancing healthcare quality in the regions. Their efforts focus on capacity building, ensuring healthcare workers have the skills and knowledge needed to deliver high-quality services in all seven districts in the region. The activities of health-related international NGOs prioritize quality of care, working with local systems to implement standards, improve clinical practices, and reduce errors via their strategic investments in healthcare infrastructure, equipment, and supply chains management. In the Savannah Region, the interventions of agencies like the WHO, USAID, GAVI, and UNICEF have strengthened the health system, improved maternal and child health, and addressed specific health challenges, including the provision of vaccines, equipment, and infrastructure, and transport (more than 350 motorbikes), leading to better health outcomes and more resilient health system in the region.

3. Joint local and international partnerships are essential for improving health outcomes, which can significantly reduce mortality rates, improve health status, and manage chronic diseases. Joint health-related local and international partnerships (Latter-day Saints, CRS, and SRHD) combine to provide resources and expertise to tackle complex health challenges like maternal healthcare, malaria, typhoid, and others more effectively. This collaboration, facilitated through knowledge sharing, supporting innovative solutions, and strengthening health systems, has contributed largely to better management of chronic diseases, reduced mortality rates, and overall improved health status. Collaborations with WHO, GAVI, and UNICEF have also contributed to progress in areas like malaria control, maternal health, and vaccination programs across all the districts in the region.

4. Local and international NGOs and agencies working in the Savannah Region face significant challenges, including funding constraints, operational challenges, lack of health infrastructure and equipment, staff shortages and turnover, inadequate community engagement and participation, and poor monitoring and evaluation.

5. Collaboration and partnership between local and international NGOs and agencies and health authorities, and community members are crucial for improving healthcare outcomes, with resource sharing, health facility resilience, and collaboration as key areas to focus on.

6. Despite positive impacts from health-related NGOs' activities in the Savannah Region, challenges, including inconsistent vaccine supply affecting immunization coverage, referral difficulties in areas without NGO coverage, gaps in maternal death audits, and a lack of specialty services like pediatrics and ophthalmology, persist.

Recommendations:

Based on the findings and the conclusions of the study, the following recommendations are made for the consideration of authorities to improve the impact of health-related local and international NGOs and agencies on healthcare outcomes in the Savannah Region.

Enhancing Local NGO Impact

The Regional Health Directorate should prioritize supporting local NGOs with resources and technical assistance to overcome challenges related to distance and healthcare facility utilization. District Health Directorates should foster partnerships with local NGOs to extend healthcare services to hard-to-reach areas, focusing on community health education and mobilization. Strengthening community engagement through trained Community Health Workers is key to improving skilled delivery rates and antenatal care attendance.

Leveraging International Agency Support

The Regional Health Directorate should collaborate with international health agencies like WHO, UNICEF, and USAID to enhance capacity building, quality of care, and strategic investments in healthcare infrastructure. District Health Directorates should work with these agencies to identify specific needs for equipment, vaccines, and staff training, ensuring alignment with regional health priorities.

Strengthening Partnerships for Better Outcomes

Joint local and international partnerships should be fostered to tackle complex health challenges like maternal healthcare and disease management. The Regional Health Directorate should facilitate knowledge sharing and resource pooling among partners to strengthen health systems and improve chronic disease management and mortality rates.

Addressing Operational Challenges

To overcome funding constraints and operational hurdles, the Regional Health Directorate should advocate for sustainable funding models and support NGOs in resource mobilization. District Health Directorates should enhance community engagement and participation to improve healthcare service uptake and retention.

Improving Collaboration and Partnerships

The Regional Health Directorate should lead in coordinating partnerships among NGOs, agencies, health authorities, and communities, focusing on resource sharing and health facility resilience. District Health Directorates should ensure local partnerships translate into tangible improvements in healthcare access and quality.

Tackling Specific Challenges

To address inconsistent vaccine supply, referral challenges, and gaps in specialty services, the Regional Health Directorate should work with international agencies to bolster supply chains and referral networks. District Health Directorates should prioritize maternal death audits and support outreach programs to improve immunization coverage and access to specialty care.

Limitations of the study

A cross-sectional design with mixed methods (using questionnaires, focus group discussions (FGDs), and on-site document review were used for data collection to quickly assess the impact of NGO interventions on healthcare outcomes in the Savannah Region. Although this approach allowed for a snapshot of the situation, leveraging secondary and primary data to provide initial insights into potential associations between NGO activities and health indicators, the design is limited in establishing causality between NGO interventions and the observed outcomes. Additionally, the temporal relationship between interventions and outcomes is uncertain, and selection bias may be present if NGOs chose areas with better existing healthcare systems.

Future Directions:

To cure this limitation and strengthen causal inference, future studies could employ a more robust approach, such as a quasi-experimental design combining propensity score matching and difference-in-differences analysis. This should involve matching intervention and control areas based on baseline characteristics and comparing changes over time to estimate NGO impact more accurately.

Declaration

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REFERENCES

1. Hushie, M. (2016). Public-non-governmental organisation partnerships for health: An exploratory study with case studies from recent Ghanaian experience. BMC Public Health, 16(1), 963. https://doi.org/10.1186/s12889-016-3636-2

2. Patil, R., Agarwal, D., Kaur, H., Gadgil, M., Jackson, T., Fernandes, G., & Juvekar, S. (2021). Engaging with stakeholders for community-based health research in India: Lessons learnt, challenges and opportunities. Journal of Global Health, 11, 03072. https://doi.org/10.7189/jogh.11.03072
3. Doshmangir, L., Sanadghol, A., Kakemam, E., & Majdzadeh, R. (2025). The involvement of non-governmental organisations in achieving health system goals based on the WHO six building blocks: A scoping review on global evidence. PLOS ONE, 20(1), e0315592. https://doi.org/10.1371/journal.pone.0315592
4. United Nations(2015). Partnerships for sustainable development goals: a legacy review towards realizing the 2030 Agenda. https://sustainabledevelopment.un.org/content/documents/2257Partnerships%20for%20SDGs%20-%20a%20review%20web.pdf
5. World Health Organization (2011). Bugs, drugs, and smoke: stories from public health. Geneva: World Health Organization.
6. Public Health Agency of Canada, World Health Organization (2008). Health equity through intersectoral action: an analysis of 18 country case studies. Available at: http://www.who.int/social_determinants/resources/health_equity_isa_2008_en.pdf
7. Gillies P (1998). Effectiveness of alliances and partnerships for health promotion. Health Promot Int. 1998;13(2):99–120. https://doi.org/10.1093/heapro/13.2.99.
8. Shortell SM, Zukoski AP, Alexander JA, Bazzoli GJ, Conrad DA, Hasnain-Wynia R, Sofaer S, Chan B, Casey E, Margolin S (2002). Evaluating partnerships for community health improvement: tracking the footprints. J Health Polit Policy Law. 2002;27(1):49–92. https://doi.org/10.1215/03616878-27-1-49.
9. Hayes SL, Mann MK, Morgan FM, Kelly MJ, Weightman AL (2012). Collaboration between local health and local government agencies for health improvement. Cochrane Database Syst Rev. (10): CD007825. https://doi.org/10.1002/14651858.CD007825.pub6.
10. Rantala R, Bortz M, Armada F (2014). Intersectoral action: local governments promoting health. Health Promot Int. 29(Suppl 1):i92i102.
11. Roussos ST, Fawcett SB (2000). A review of collaborative partnerships as a strategy for improving community health. Annu Rev Public Health. 21(1):369–402. https://doi.org/10.1146/annurev.publhealth.21.1.369.
12. Foster-Fishman PG, Berkowitz SL, Lounsbury DW, Jacobson S, Allen NA (2001). Building collaborative capacity in community coalitions: a review and integrative framework. Am J Community Psychol. 29(2):241–61. https://doi.org/10.1023/A:1010378613583.
13. Anderson LM, Adeney KL, Shinn C, Safranek S, Buckner-Brown J, Krause LK (2015). Community coalition-driven interventions to reduce health disparities among racial and ethnic minority populations. Cochrane Database Syst Rev. 6:CD009905.
14. Alderwick, H., Hutchings, A., Briggs, A. et al (2021). The impacts of collaboration between local health care and non-health care organizations and factors shaping how they work: a systematic review of reviews. BMC Public Health **21**, 753 (2021). https://doi.org/10.1186/s12889-021-10630-1
15. Booske BC, Athens JK, Kinding DA et al (2010). County Health Rankings Working Paper: Different Perspectives for Assigning Weights to Determinants of Health. 2010. https://uwphi.pophealth.wisc.edu/publications/other/different-perspectives-for-assigning-weights-to-determinants-of-health.pdfReturn to ref 6 in the article
16. Alderwick H, Gottlieb LG (2019). Meanings and misunderstandings: a social determinants of health lexicon for health care systems. Milbank Q. 2019;97(2):407–19. https://doi.org/10.1111/1468-0009.12390.
17. World Health Organization. Ottawa charter for health promotion. 1986. http://www.who.int/hpr/NPH/docs/ottawa_charter_hp.pdf.
18. Commission on the Social Determinants of Health. Closing the gap in a generation: health equity through action on the social determinants of health. Geneva: WHO; 2008.
19. World Health Organization. The Bangkok Charter for Health Promotion in a Globalized World. 2005. https://www.who.int/healthpromotion/conferences/6gchp/bangkok_charter/en/Return to ref 3 in the article

20. Smith KE, Bambra C, Joyce KE, Perkins N, Hunter DJ, Blenkinsopp EA (2009). Health partners? A systematic review of the impact of organizational partnerships on public health outcomes in England between 1997 and 2008. J Public Health. 2009;31(2):210–21. https://doi.org/10.1093/pubmed/fdp002.
21. Towe VL, Leviton L, Chandra A, Sloan JC, Tait M, Orleans T (2016). Cross-sector collaborations and partnerships: essential ingredients to help shape health and well-being. Health Aff. 2016;35(11):1964–