

Impact of Healthcare Funding and Partnerships on Child Mortality Reduction in Sub-Saharan Africa

28th November 2025

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Quantitative Reasoning – Summative Assessment

1.0 INTRODUCTION

Child mortality remains one of the most pressing public health challenges in Sub-Saharan Africa. Many children under the age of five continue to die from causes that are both preventable and treatable, such as malaria, pneumonia, diarrhoea, and complications at birth. While medical solutions exist, their impact depends heavily on how well health systems are funded and how effectively different actors work together through partnerships.

Healthcare funding, whether from governments, donors, or private organisations plays a central role in improving access to essential services such as vaccinations, prenatal care, and child health check-ups. However, funding on its own is not enough. Its effectiveness depends on good governance, targeted spending, and strong partnerships between governments, NGOs, local health providers, and communities. When these pieces are aligned, resources can be used to strengthen primary healthcare, train frontline workers, and deliver services closer to families who need them.

This study uses survey data from 31 respondents to explore how people perceive healthcare access, government funding, and child health service coverage in their communities. By applying basic descriptive statistics (mean, median, mode, range, and standard deviation), and examining the relationship between perceived funding and child healthcare access, the project aims to generate insights that support my wider mission of improving child health outcomes in underserved communities across Sub-Saharan Africa.

2.0 MISSION

My mission is to secure funding and partnerships to expand healthcare in underserved communities in Sub-Saharan Africa. I aim to leverage technology and community engagement to advocate for free medical services and provide essential diagnostic equipment. By collaborating with local organisations, health workers, and other stakeholders, my goal is

to contribute to a reduction in child mortality rates by 2030, particularly by improving access to basic child and maternal health services.

3.0 JUSTIFICATION OF THE TOPIC & ALIGNMENT WITH THE MISSION STATEMENT

3.1 Why this topic is important

a. Public health relevance

High child mortality rates are a sign of deeper inequalities in access to healthcare. Many children die from illnesses that could be prevented through simple and affordable interventions like immunisation, timely treatment, and quality antenatal care. Understanding how funding and partnerships influence these services is critical for designing better interventions and policies.

b. Role of funding and partnerships

In many parts of Sub-Saharan Africa, health facilities struggle with shortages of staff, medicines, equipment, and infrastructure. Adequate and well-managed funding can bridge some of these gaps. At the same time, partnerships between governments, NGOs, private organisations, and community groups can strengthen service delivery, extend outreach to remote areas, and introduce innovations such as mobile clinics or telehealth.

c. Evidence for decision-making

There is often a gap between high-level discussions about “health investment” and the lived reality of people in communities. This project adds a small but useful quantitative perspective by capturing how respondents perceive healthcare access, funding sufficiency, and child healthcare coverage where they live. Even though the sample is small, it provides evidence that can guide future decisions, advocacy, and program design.

3.2 Alignment with my mission

My mission is centred on improving healthcare access for underserved communities, particularly with a focus on reducing child mortality. This research topic directly supports that mission by:

- Examining whether people perceive healthcare in their communities as accessible.
- Looking at how sufficient government funding is seen to be.
- Exploring how many children under five are thought to have regular access to basic services.
- Testing the relationship between perceived funding sufficiency and child healthcare access.

The results can help shape future initiatives I undertake. For example, deciding whether to prioritise fundraising, advocacy for better public funding, or building partnerships that specifically target child health services and prenatal care.

4.0 POPULATION

The broader population for this project is:

Individuals living in Sub-Saharan African communities who have some level of experience or perception regarding child healthcare access, healthcare funding, and partnerships.

This includes parents/guardians, students, community leaders, and potentially health workers who understand how healthcare services function in their areas and how children under five access those services.

5.0 SAMPLE SIZE

From this broad population, a smaller sample was selected for practical reasons. It would be impossible in this context to reach everyone across different countries and communities in Sub-Saharan Africa.

For this study:

- Sample size: 31 respondents
- Roles represented: Majority students and parents/guardians, with some community leaders.
- Sampling method: Convenience sampling using a Google Forms questionnaire shared digitally.

Although 31 people is a small sample and cannot represent the entire region, it is reasonable for an introductory quantitative exercise. The sample provides enough data to compute descriptive statistics and explore basic relationships between perceived healthcare funding and child health service access.

6.0 DATA COLLECTION AND ANALYSIS METHODS

6.1 Data collection method

Data was collected using a structured Google Forms questionnaire. The form included:

- Demographic questions (e.g., age, gender, role in the community).
- **Perception questions using a 5-point Likert scale:**
 - “How accessible is healthcare in your community?” (1 = Not accessible at all, 5 = Very accessible)
 - “How sufficient is government funding healthcare service in your community?” (1 = Not sufficient at all, 5 = Very sufficient)
 - “How effective are partnerships between local health facilities and NGOs or government agencies in improving child healthcare services?” (1 = Not effective at all, 5 = Very effective)
- **Proportion-based questions:**

- “Approximately what percentage of children under 5 in your community have regular access to basic medical services (e.g., vaccinations, check-ups)?”
- “Approximately what percentage of pregnant women in your community receive adequate prenatal care (at least 4 antenatal visits)?”

These responses were exported to Google Sheets for analysis.

6.2 Analysis method

The analysis focused on key questions relevant to my mission:

1. How accessible is healthcare in your community?
2. How sufficient is government funding healthcare service in your community?
3. Approximately what percentage of children under 5 have regular access to basic medical services?

For these questions, I:

- Organised responses into frequency distribution tables.
- Calculated measures of central tendency (mean, median, mode).
- Calculated measures of spread (range and standard deviation).
- Created visualisations (column charts) to show how responses are distributed.

For the relational part of the study, I examined the link between:

- Perceived government funding sufficiency (1–5)
- Estimated child healthcare access (using midpoints: 10, 30, 50, 70, 90)

Using Google Sheets, I computed Pearson’s correlation coefficient (r) and plotted a scatter plot to visualise the relationship between government funding perceptions and child healthcare access.

7.0 PRESENTATION AND INTERPRETATION OF KEY FINDINGS

7.1 Perceived Accessibility of Healthcare in the Community

7.1.1 Descriptive statistics

Variable: "How accessible is healthcare in your community?"

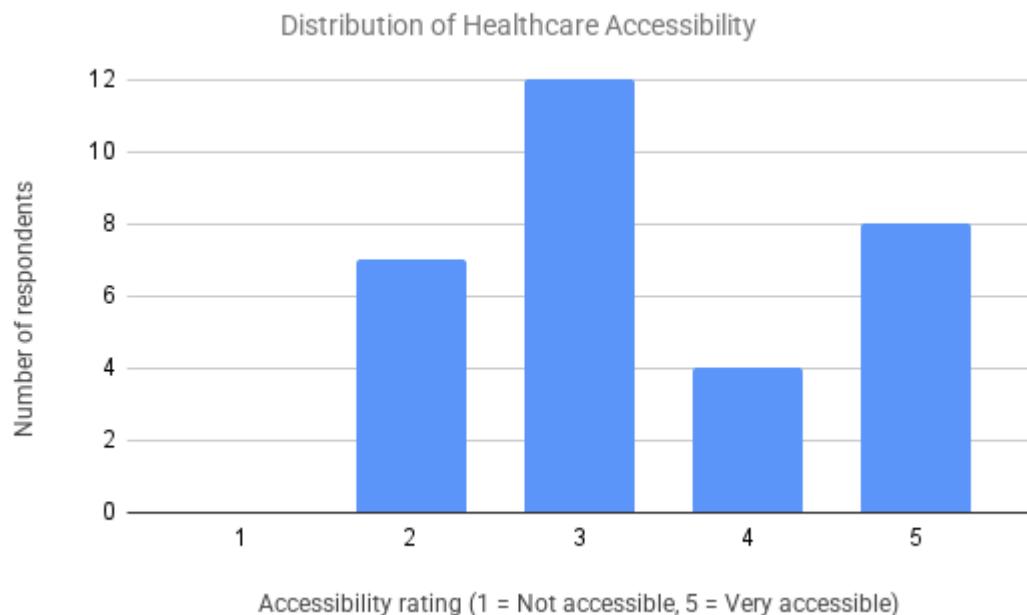
Scale: 1 = Not accessible at all, 5 = Very accessible

Sample size: 31

From the frequency distribution table:

Statistics	Values
Mean	3.42
Median	3
Mode	3
Range	3 (from 2-5)
Standard deviation	1.12

7.1.2 Chart



7.1.3 Interpretation

On average, respondents rated healthcare accessibility in their communities between “moderately accessible” and “fairly accessible,” with a mean of 3.42 on a 5-point scale. The fact that the median and mode are both 3 suggests that the most typical response is a neutral/mid-level rating of accessibility, rather than very high or very low access.

The standard deviation of around 1.12 indicates that there is some spread in opinions, but not extreme. Some respondents perceive poor access (rating 2), while others experience high access (rating 5). This mixed picture suggests that healthcare access may be uneven, possibly varying by location, facility quality, or socio-economic conditions.

In relation to my mission, this finding reinforces the idea that healthcare is not consistently accessible for all families, which directly affects how quickly children can receive treatment, vaccinations, and check-ups. It highlights a clear need for targeted interventions that make services more accessible, especially in underserved communities where children are at a higher risk of preventable death.

7.2 Perceived Sufficiency of Government Healthcare Funding

7.2.1 Descriptive statistics

Variable: "How sufficient is government funding healthcare service in your community?"

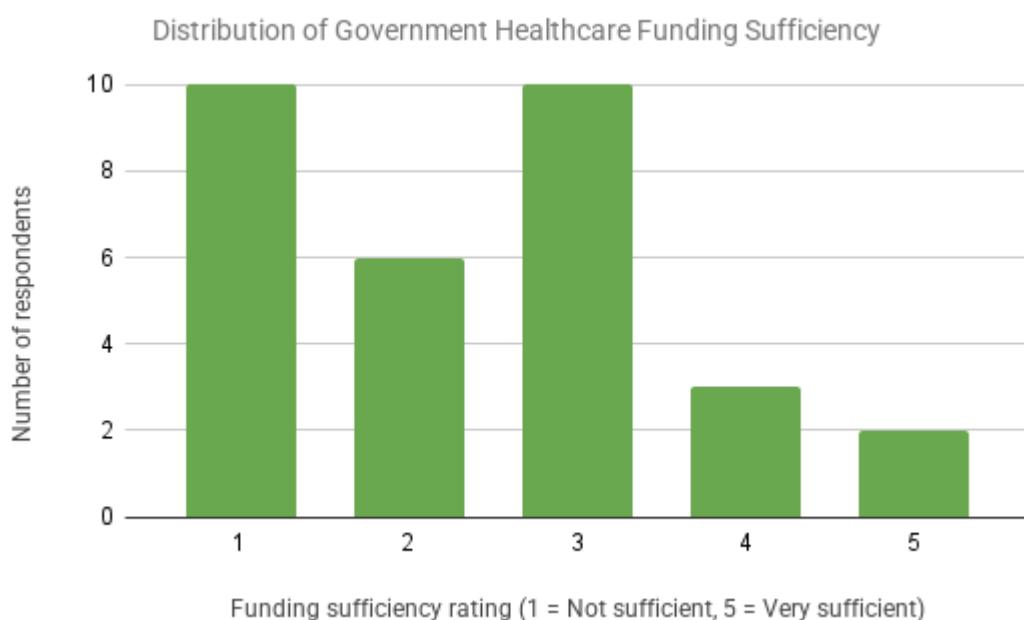
Scale: 1 = Not sufficient at all, 5 = Very sufficient

Sample size: 31

From the frequency distribution table:

Statistics	Values
Mean	2.39
Median	2
Mode	1
Range	4 (from 2-5)
Standard deviation	1.23

7.2.2 Chart



7.2.3 Interpretation

The mean funding sufficiency score of 2.39 suggests that respondents generally feel that government funding is inadequate for healthcare in their communities. The median of 2 and mode of 1 show that the most common responses fall on the low end of the scale, with many people perceiving funding as “not sufficient at all.”

The relatively large range (1–5) and a standard deviation of about 1.23 imply that while some respondents may see funding as more adequate, a significant proportion feel that resources are far below what is needed. This aligns with known challenges in many Sub-Saharan African settings, where health budgets can be limited and not always evenly distributed.

For my mission, this provides a quantitative confirmation of the funding gap I want to address. If people on the ground perceive funding as insufficient, it suggests that health facilities may struggle to maintain quality services, obtain necessary supplies, and reach vulnerable children. This supports the need for both increased funding and stronger financial partnerships to improve child health outcomes.

7.3 Estimated Percentage of Children Under 5 with Regular Access to Basic Medical Services

7.3.1 Descriptive statistics

Variable:

“Approximately what percentage of children under 5 in your community have regular access to basic medical services (e.g., vaccinations, check-up)?”

Response categories were converted to midpoints:

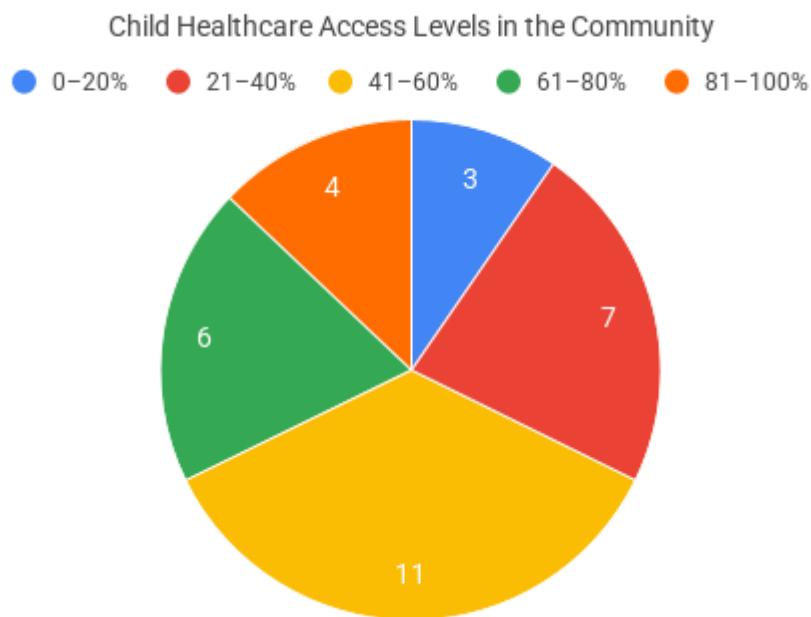
Categories	Midpoints
0-20%	10
21-40%	30
41-60%	50

61-80%	70
81-100%	90

Based on the grouped data:

Statistics	Values
Mean	50.65
Median	50
Mode	50 (41%-60% category)
Range	80 (from 10-90)
Standard deviation	23.37

7.3.2 Chart



7.3.3 Interpretation

The mean and median both revolve around 50%, and the mode falls in the 41–60% category. This suggests that respondents believe roughly half of the children under five in their communities have regular access to basic health services such as vaccinations and check-ups. While this is better than extremely low coverage, it also means that a large proportion of children may not be consistently reached.

The wide range (10–90) and relatively high standard deviation (≈ 23.37) show that perceptions differ significantly across respondents. In some contexts, access might be very low, while in others it might be close to universal. This hints at geographical and systemic inequalities.

For my mission, this finding is critical. It means there is still a substantial gap between current reality and the ideal of full coverage for all children. It underscores the need for targeted partnerships, mobile outreach, stronger community engagement, and better use of funding to close these gaps and ensure no child is left behind.

7.4 Correlation Between Perceived Funding Sufficiency and Child Healthcare Access

7.4.1 Variables examined

- X (Independent): “How sufficient is government funding healthcare service in your community?” (1–5)
- Y (Dependent): Estimated percentage of children under 5 with regular access to basic services (using midpoints: 10, 30, 50, 70, 90)

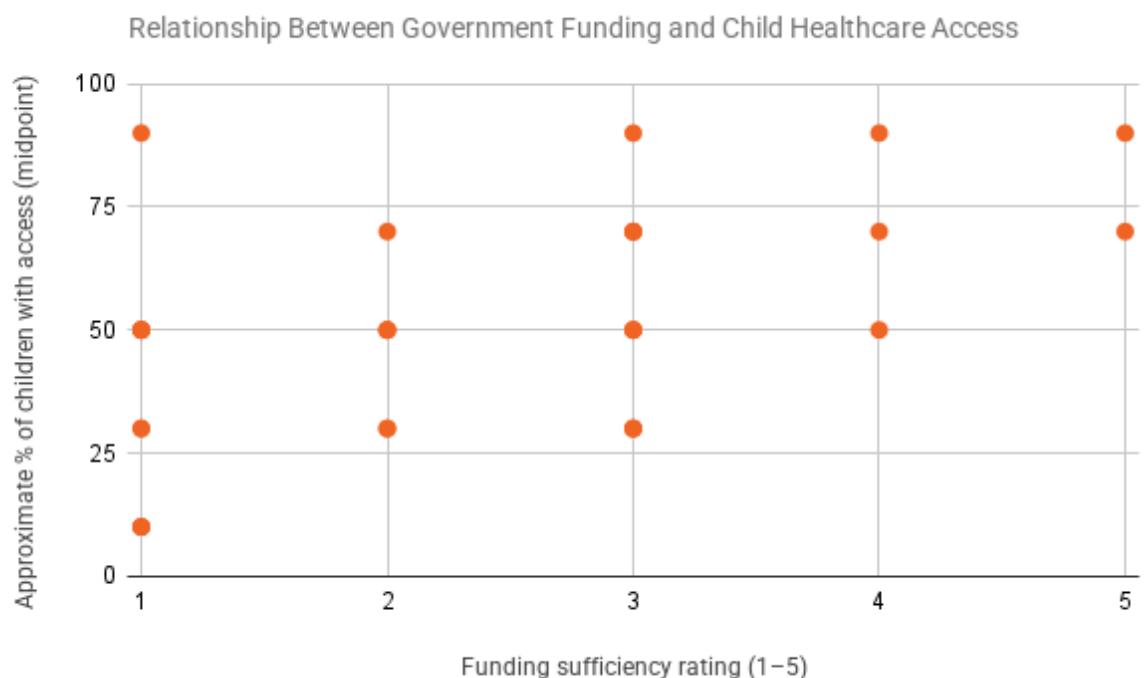
7.4.2 Correlation result

Using Google Sheets, the Pearson correlation coefficient (r) between X and Y was found to be:

- $r = 0.52$

This is a moderate positive correlation.

7.4.3 Scatter plot



7.4.4 Interpretation of strength and direction

Standard guidelines for Pearson's r suggest:

- 0.00–0.19: very weak
- 0.20–0.39: weak
- 0.40–0.59: moderate
- 0.60–0.79: strong
- 0.80–1.00: very strong

An r of 0.52 indicates a moderate positive relationship between perceived funding sufficiency and estimated child healthcare access. In simple terms, respondents who rated government funding as more sufficient also tended to estimate higher percentages of children under five having regular access to basic health services.

This supports the idea that better-resourced health systems are associated with better child healthcare coverage. It aligns well with my mission, which assumes that increased and better-managed funding, combined with partnerships, can help reduce child mortality.

7.4.5 Does this imply causation?

Even though the relationship is moderate and positive, correlation does not prove causation. We cannot say from this data alone that increased funding directly causes higher child healthcare access. Several other factors might be at play, including:

- Distance to health facilities
- Quality and availability of health workers
- Community awareness and cultural beliefs
- Strength of local partnerships and NGOs

However, the correlation suggests that where funding is perceived as more adequate, child health access also tends to be better. This points to funding as an important driver, even if it is not the only one. It also supports advocacy for improved health financing and accountability in how funds are used.

8.0 RESEARCH RECOMMENDATIONS

Based on these findings, I would make the following recommendations:

- 1. Strengthen and better target healthcare funding in underserved communities**

Since respondents generally perceive government funding as insufficient, and higher funding is moderately associated with better child access, policymakers should increase allocations for primary healthcare, particularly in rural and low-income areas. Funds should be directed towards essential child services (vaccinations, growth monitoring, and basic treatment) and monitored to ensure they reach frontline facilities.

- 2. Promote strategic partnerships to expand child health service coverage**

Governments, NGOs, private organisations, and community-based groups should collaborate to close gaps in coverage. Partnerships can support outreach clinics, mobile health services, telemedicine, and community health worker programs. This is especially important in areas where distance and lack of infrastructure limit access.

- 3. Invest in community awareness and maternal health services**

While funding and partnerships are key, parents also need to understand the importance of vaccinations, antenatal care, and early treatment. Programs that combine investments in child health with health education, especially for mothers and caregivers, can improve both demand for and utilisation of services, thereby contributing to a sustained reduction in child mortality.

9.0 REFLECTION

This study has given me a more concrete, data-driven view of my mission to reduce child mortality in Sub-Saharan Africa. The results show that people in my sample believe healthcare is only moderately accessible and that government funding is often not sufficient. At the same time, the moderate positive correlation between perceived funding sufficiency and child healthcare access supports the idea that better-resourced health systems tend to

serve children more effectively. This confirms that focusing on funding and partnerships is not just theoretical, but practically relevant to improving child outcomes.

However, the study also has clear limitations. The sample size of 31 is small and based on convenience sampling, which means the findings cannot be generalised to the entire region. The responses are perception-based and may be influenced by personal bias or limited information. In future studies, I would like to use a larger, more diverse sample, include more health workers, and combine surveys with qualitative interviews. This would provide deeper insight into how funding flows, how partnerships actually operate on the ground, and how these factors can be shaped to save more children's lives.