



## RESEARCH ARTICLE

### COMPARATIVE STUDY OF CHILD MORTALITY IN EAST AND WEST AFRICA (SDG 3.2.1)

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#### ABSTRACT

This project investigates child mortality disparities between East and West Africa in the context of achieving Sustainable Development Goal (SDG) 3.2.1: ending preventable deaths of children under five by 2030. By analyzing data from reputable sources like WHO and national health agencies, the project aims to:

- Compare child mortality rates across East and West Africa.
- Identify factors contributing to the observed disparities, including healthcare access, nutrition, sanitation, poverty, and political instability.

Data visualization techniques will effectively communicate trends and comparisons. The project will culminate in targeted recommendations for policymakers and healthcare. Professionals, focusing on strengthening healthcare systems, addressing underlying social. Determinants of health and implementing interventions in high-burden regions. This comparative analysis is expected to contribute valuable insights to achieving SDG 3.2.1 and improving child health outcomes in East and West Africa.

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## INTRODUCTION

- SDG goal 3 (i.e. Good Health and Well-being), is one of the 17 Sustainable Development Goals established by the United Nations in 2015.
- It aims to prevent needless suffering from preventable diseases and premature death by focusing on key targets that boost the health of a country's overall population.
- Regions with the highest burden of disease and neglected population groups and regions are priority areas.
- Under-five mortality which is SDG goal 3.2.1 under the main SDG goal 3 is the probability of a child born in a specific year or period dying before reaching the age of 5 years, if subject to age specific mortality rates of that period, expressed per 1000 live births.
- The target is that by 2030, there will be end of preventable deaths of newborns and children under 5 years of age, with all countries aiming to reduce under-5 mortality to at least as low as 25 per 1,000.
- I seek to contribute to this agenda by making a comparative study between the Eastern and Western part of Africa

## DESCRIPTION

### Data Collection

- Gather data from WHO and national health agencies.
- Organize, validate, and clean the data.

### Data Analysis

- Analyse child mortality rates and contributing factors.
- Use Excel and Power BI for analysis.

### Data Visualization

- Create charts and graphs using Power BI and Excel.
- Visualize trends and comparisons.

### Findings and Recommendations

- Summarize key findings.
- Provide recommendations for policymakers and healthcare professionals.



## Data Collection

**Description:** This module focuses on gathering data from various reputable sources such as the World Health Organization (WHO) and national health agencies. The data includes child mortality rates, healthcare access, nutrition levels, sanitation access, poverty rates, and political stability indices for East and West African countries.

## Functions

- Identify and access reliable data sources.
- Extract and organize relevant data.
- Validate and clean the collected data for accuracy and consistency.

## Data Analysis

**Description:** This module is responsible for analysing the collected data using statistical methods. The goal is to compare child mortality rates between East and West Africa and identify the key factors contributing to the disparities.

## Functions

- Perform statistical analysis on mortality rates.
- Analyse the relationship between mortality rates and other factors (healthcare access, nutrition, sanitation, poverty, political stability).

- Use Excel and Power BI for data analysis and visualization.

## Data Visualization

**Description:** This module aims to present the analysed data through visual tools such as charts and graphs. The visualizations will highlight trends, comparisons, and significant findings.

## Functions

- Create visual representations of data using Power BI and Excel.
- Develop charts and graphs to compare child mortality rates.
- Visualize the impact of contributing factors on mortality rates.

## Findings and Recommendations

**Description:** This module summarizes the key findings from the data analysis and provides targeted recommendations for policymakers and healthcare professionals to address the identified disparities.

## Functions

- Summarize key findings from the data analysis.
- Develop recommendations to improve child health outcomes.

- Focus on strengthening healthcare systems, addressing social determinants of health, and implementing targeted interventions.

### Presentation

**Description:** This module involves preparing a PowerPoint presentation to communicate the project's objectives, methodology, findings, and recommendations.

### Functions

- Prepare a PowerPoint presentation to effectively communicate the project.
- Ensure that the presentation includes visuals, key findings, and recommendations.

## SYSTEM TESTING

### Data Collection Testing

- Verify data sources and extraction processes.
- Ensure data is accurate and consistent.

### Data Analysis Testing

- Validate statistical methods and results.
- Ensure analysis is correct using Excel and Power BI.

### Data Visualization Testing

- Check accuracy of charts and graphs.
- Ensure visualizations accurately represent the data.

### Findings and Recommendations Testing

- Cross-check findings with analysed data.
- Ensure recommendations are logical and actionable.

### Presentation Testing

- Review presentation for completeness.
- Ensure clarity and coherence in communication.

## CONCLUSION

### Summary of Findings

- Significant disparities in child mortality rates between East and West Africa.
- Contributing factors include healthcare access, nutrition, sanitation, poverty, and political instability.

### Implications

- Urgent need for targeted interventions in high-burden regions.
- Importance of improved healthcare systems and addressing social determinants of health.

## RECOMMENDATIONS

- Strengthen healthcare systems for better access to services.
- Address malnutrition and sanitation issues.

- Implement targeted interventions in high-burden regions.
- Advocate for increased resources and support for child health programs.

### Future Research

- Explore additional factors influencing child mortality.
- Evaluate the effectiveness of implemented interventions.

### Contribution to SDG 3.2.1

○ Insights from this study can aid efforts to achieve SDG 3.2.1 and improve child health outcomes in East and West Africa.

## FUTURE ENHANCEMENT

### Expanded Data Sources

- Integrate additional data sources for a comprehensive analysis.
- Collaborate with local and international health agencies for real-time data.

### Advanced Analytics

- Use advanced statistical methods and machine learning algorithms.
- Implement predictive analytics to forecast future trends.

### Geospatial Analysis

- Incorporate geospatial data for effective regional visualization.
- Use GIS to map high-risk areas and prioritize interventions.

### Enhanced Data Visualization

- Develop interactive dashboards with Power BI.
- Create sophisticated visualizations.

### Policy Impact Assessment

- Assess the effectiveness of existing policies.
- Propose evidence-based policy adjustments and new initiatives.

### Community Engagement

- Partner with local communities to understand their needs.
- Engage community leaders in developing targeted health interventions.

### Longitudinal Studies

- Initiate studies to monitor long-term impacts.
- Track changes over time for sustainable strategy assessment.

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