Global Malnutrition Trends: A Power BI Analysis (1983-2019)

Introduction

Malnutrition is a major global health challenge, particularly affecting children under five years old in low-income regions. This project aims to analyze malnutrition trends from 1983 to 2019 using a dataset from UNICEF, WHO, and the World Bank. The analysis focuses on severe wasting, wasting, stunting, underweight, and overweight conditions across different countries.

To understand the economic impact, countries are classified by income levels (low, lower-middle, upper-middle, and high income) and by special economic groups like Least Developed Countries (LDC), Low-Income Food Deficient (LIFD), Landlocked Developing Countries (LLDC), and Small Island Developing States (SIDS). Using Power BI, this project will provide insightful data visualizations to support policymaking and resource allocation to combat child malnutrition effectively.

Project Flow

To complete this analysis, the following key milestones are followed:

Milestone 1: Data Collection & Extraction

- **Objective:** Gather and understand the dataset.
- **Activities:**
    - Download and review the dataset.
    - Analyze column descriptions, such as country codes, survey years, income classifications, and malnutrition indicators.

Milestone 2: Data Preparation

- **Objective:** Clean and prepare the data for visualization.
- **Activities:**
    - Remove irrelevant or missing data.
    - Ensure data accuracy and consistency.
    - Structure data for Power BI integration.

Milestone 3: Data Visualization

- **Objective:** Use Power BI to create visual insights.
- **Key Scenarios:**
    1. **Count of U5 Population:** Understanding the number of children under five included in the dataset.
    2. **Sum of Survey Sample (11M):** Representing the total number of survey samples collected.
    3. **Sum of Underweight (2.08K):** Highlighting the prevalence of underweight children.
    4. **Stunting by Income Analysis:** Correlating stunting levels with income classifications.
    5. **Overweight by Country:** Showing the distribution of overweight children globally.

6. **Comparison of Overweight and Underweight by Income:** Identifying patterns in malnutrition based on economic status.
7. **Total Income Classification:** Representing the distribution of income groups.

Milestone 4: Dashboard Design

- **Objective:** Develop an interactive and user-friendly Power BI dashboard.
- **Activities:**
  - Create a responsive dashboard design.
  - Ensure real-time data monitoring.
  - Apply filters to refine insights.

Milestone 5: Report Creation

- **Objective:** Document key findings and insights.
- **Activities:**
  - Structure the report with an introduction, methodology, analysis, and conclusions.
  - Use visual aids such as charts and graphs for better understanding.

Milestone 6: Performance Testing

- **Objective:** Ensure the efficiency and accuracy of the project.
- **Activities:**
  - Analyze data loading performance.
  - Evaluate the effectiveness of filters.
  - Measure the number of visualizations and calculations.

Milestone 7: Project Demonstration & Documentation

- **Objective:** Present the project in a structured format.
- **Activities:**
  - Record an explanation video demonstrating the Power BI analysis.
  - Provide a step-by-step documentation of the entire project.

Conclusion

This Power BI analysis provides a comprehensive view of malnutrition trends among children under five. By correlating economic status with malnutrition rates, policymakers can make data-driven decisions to improve child health. The project's visualizations and insights aim to contribute to global efforts in reducing malnutrition and ensuring a healthier future for children worldwide.