

Project Scoping

Name

Assessing Drivers of Anxiety and Depression in Widows: A Data-Driven Analysis (by André Jardim)

Mission Alignment

This project supports the Global Fund for Widows' mission of empowering widows to overcome poverty by focusing on understanding and addressing the mental health challenges they face. The analysis will provide insights into how factors like income, food security, dependents, and access to resources contribute to mental health issues such as anxiety, depression, and suicidal thoughts. These findings will inform GFW's efforts to create targeted interventions that can improve both the mental health and financial stability of widows, aligning with GFW's goal of fostering self-sufficiency and empowerment.

Business Problem

Mental health challenges, particularly anxiety and depression, are a significant barrier to the well-being and financial stability of widows. GFW needs to understand which baseline socioeconomic factors (e.g., income, food security, number of dependents) contribute to higher levels of anxiety and depression among widows.

The project will:

- Identify and analyze the key factors contributing to anxiety and depression.
- Understand the differences between widows with and without mental health challenges.
- Examine whether factors like suicidal thoughts correlate with worse income, health, or living conditions.

Business Impact

The analysis will provide GFW with actionable insights to:

- Develop more targeted mental health interventions and financial support programs.
- Identify specific socioeconomic conditions that worsen mental health outcomes.
- Improve the design of GFW's programs by using data-driven evidence to shape future policies and resource allocation.

Dataset(s)

The data for this project is provided by the Global Fund for Widows (GFW) and consists of one Excel file containing two sheets:

Mental Health Data: Anxiety and depression scores measured using GAD-7 and PHQ-9 scales, along with reports of suicidal thoughts. This dataset includes a sheet with over 600 entries, though potential duplicates mean the exact number of unique individuals is uncertain.

Baseline Data: Socioeconomic factors such as income sufficiency, food security, number of dependents, and ability to pay school fees. This dataset also includes a sheet with over 600 entries, with potential duplicates affecting the determination of unique individuals.

Strengths

The data is highly relevant to GFW's mission and offers direct insights into the mental health challenges faced by widows. It combines both subjective mental health data and objective socioeconomic indicators, providing a holistic view of the situation.

Weaknesses

Biases in self-reporting or incomplete data from survey responses may limit accuracy. Cross-validation of key findings and sensitivity analyses can help mitigate these issues.

Key Metrics and Dimensions

Metrics:

- **Anxiety levels:** Quantitative GAD-7 scores (numerical values, e.g., 0–21).
- **Depression levels:** Quantitative PHQ-9 scores (numerical values, e.g., 0–27).
- **Suicidal thoughts:** Count or percentage of individuals reporting suicidal thoughts.
- **Socioeconomic factors:** Measurable indicators such as income sufficiency (binary or scale), number of dependents (count), and ability to pay school fees (binary or scale).

Dimensions:

- **Anxiety level categories:** High, moderate, or low anxiety based on GAD-7 score thresholds.
- **Depression level categories:** High, moderate, or low depression based on PHQ-9 score thresholds.
- **Presence of suicidal thoughts:** Binary (yes/no) or Scale.
- **Socioeconomic segmentation:** Categories or groups based on income sufficiency, food security, dependents (e.g., 0–2 dependents, 3+ dependents), or ability to pay school fees.

Milestones

Data Cleaning and Preprocessing: Ensure data consistency and prepare it for analysis.

Exploratory Data Analysis (EDA): Visualize key trends and relationships between anxiety/depression and baseline factors.

Statistical Analysis: Run correlation/regression analysis to identify key drivers of mental health issues.

Impact Analysis: Analyze the relationship between suicidal thoughts and other socioeconomic factors.

Final Report: Present a detailed summary of findings, correlations, and actionable insights for GFW and its partners.

Timeline

Week	Tasks
Week 1	Data cleaning, preprocessing, and initial EDA.
Week 2	Correlation and regression analysis. Continue EDA.
Week 3	Integrate findings and finalize report.