

Visualizing Gender Disparities and Water Management in Maji Ndogo

Project Overview

In this project, I aimed to uncover and communicate the intricate narratives within the community of Maji Ndogo through the lens of data visualization using PowerBI. The primary focus was on understanding and illustrating gender disparities and their ripple effects within the community, particularly concerning water collection.

Objectives and Approach

1. Visualizing Maji Ndogo's Past

I began by analyzing the gender composition of queues at shared water taps, using updated data that also included crime-related statistics. My goal was to create compelling visuals that illustrated the correlation between women queueing and their vulnerability to crime. This phase involved:

- Creating and analyzing line, scatter, and composition plots.
- Customizing maps using Shape maps in PowerBI.
- Filtering and slicing data to reveal nuanced insights.
- Interpreting the meaning behind the visuals to inform future reporting.

2. Moulding Data into Visual Stories

Next, I focused on developing robust data models. This involved importing tables separately, cleaning the data, and establishing a relational data model in PowerBI. I refined my visuals to ensure clarity and impact, with a specific emphasis on:

- Transforming data to clean and restructure it effectively.
- Customizing visuals using colors, themes, fonts, and layouts.
- Applying conditional formatting to highlight critical data points.
- Troubleshooting relationships using cardinality and directionality principles.

3. Communicating Findings

In this phase, I synthesized my insights into a comprehensive national survey report. I utilized Data Analysis Expressions (DAX) to create measures and columns that enriched the data, ensuring accurate and meaningful representation on the dashboard. Key activities included:

- Employing DAX to create calculated columns and aggregate, count, and transform data.
- Designing and constructing reports that leveraged filters, slicers, and cross-visual interactions to convey my findings effectively.

4. Promoting Transparency in Water Fund Tracking

The final phase was dedicated to building a public dashboard aimed at promoting transparency and accountability. I tracked the allocation and utilization of water funds, comparing budgeted versus actual costs to identify discrepancies and flag potential corruption. This involved:

- Conducting comprehensive data transformations and modeling.
- Creating impactful and interactive reports with various types of visualizations.
- Ensuring good design principles to make the dashboard intuitive and user-friendly.

Impact and Outcomes

Through this project, I developed a suite of data visualizations that not only narrated the current scenario in Maji Ndogo but also advocated for balanced participation in water collection. The visuals provided stakeholders with actionable insights, driving informed decision-making and fostering transparency within the community.

The culmination of my efforts was the creation of a public dashboard that tracked the progress and financial integrity of water-related projects, thereby promoting accountability and enhancing community trust. The project demonstrated the pivotal role that data visualization plays in understanding complex social dynamics and driving positive change.