Decision Report: Women's Happiness 2021

Title & Purpose

Women's Happiness 2021: Decision Report for Policy Stakeholders
 Purpose: Translate validated findings from a 125-country dataset into clear, risk-tiered recommendations for UN and NGO decision makers, with ethics, uncertainty, and reproducibility documented.

Executive Summary

This report analyzes women's happiness across 125 countries, combining data from the 2021 World Happiness Report, the 2021 Women's Happiness Report, and regional mapping data. The analysis identifies GDP, healthy life expectancy, and social support as the strongest drivers of women's happiness, while perceptions of corruption show a strong negative association.

Regional disparities are clear: Western Europe (mean ≈95.6) and Australia/New Zealand (94.4) score highest, while Sub-Saharan Africa (58.7) and Southern Asia (65.0) score lowest. Statistical checks confirm robustness, with a global mean score of 76.16 (95% CI: 73.65–78.62). Removing the top 5 happiest countries slightly reduced the mean to 75.21 but maintained a strong GDP correlation (r=0.77, p<0.001), indicating that results are not driven by outliers.

Recommendations:

- *Low risk:* Expand healthcare and social support programs.

- *Medium risk:* Pilot interventions and improve corruption measurement at subnational levels.

- *High risk:* Tie aid to governance reforms only with legal/ethical oversight.

Confidence is moderate to high. Findings are subject to data limitations (31 missing values in key features, cultural measurement differences), but results remain directionally strong.

Background & Decision Question

This report is prepared for UN agencies, NGOs, and national policymakers responsible for women's well-being. The decision is how to allocate resources and design interventions that effectively improve happiness outcomes. Stakes are medium to high, as findings influence budget allocations and may intersect with sensitive governance issues.

Data & Methods

- **Sources:** World Happiness Report (2021), Women's Happiness Report (2021), Kaggle datasets, ISO sub-regional codes.

- **Coverage:** 125 countries, 11 features (GDP, social support, life expectancy, freedom, generosity, corruption, etc.).

- **Methods:** Exploratory data analysis, correlation and regression checks, bootstrap confidence intervals, fairness checks by region, robustness tests excluding top performers.

- **LLM Evaluation:** ChatGPT was prompted with 11 structured questions (e.g., "Which country has the highest women's happiness score?"). Answers matched ground truth perfectly across all questions. Prompts and transcripts are archived.

Findings

- **Uncertainty:** Global mean score = 76.16 (95% CI: 73.65–78.62).

- **Sanity Checks:**

  - No missing values for Score; 31 missing per feature in explanatory variables.

  - Correlation matrix: GDP (r=0.80), life expectancy (r=0.83), social support (r=0.69) positively linked; corruption negatively linked (r=–0.42).

- **Bias & Fairness:** Western Europe averages ≈95.6 vs Sub-Saharan Africa ≈58.7, highlighting stark inequities.

- **Robustness:** Excluding top 5 countries reduced mean to 75.21, but GDP correlation remained strong (r=0.77, p<0.001).

Recommendations (Tiered)

- **Operational (Low Risk):**

  - Expand women's healthcare and support networks (confidence: high).

  - Share best practices from top-scoring regions.

- **Investigatory (Medium Risk):**

  - Pilot integrated health + social-support interventions in Sub-Saharan Africa and South Asia.

  - Improve measurement of corruption and governance at subnational levels.

- **High-Stakes (High Risk):**

  - Tie portions of aid to governance reforms, subject to legal and ethical review.

  - National budgetary reforms prioritizing women's health equity.

Ethical / Legal Concerns

- **Data provenance:** Based on international surveys; subject to cultural bias and missingness.

- **Fairness:** High-income regions dominate global averages, risking one-size-fits-all solutions.

- **AI reliability:** LLM-generated narrative matched ground truth but was validated at each step. Transparency and labeling are required.

Next Steps & Validation Plan

1. Collect finer-grained national and subnational data.

2. Run controlled pilots in underperforming regions.

3. Reassess results with updated datasets and fairness checks.

4. Maintain full transparency via open-source repository.