Most Dangerous Countries for Women 2024

Women's Safety Abroad: A Country-by-Country Breakdown.

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Analyzing Women's Safety Across Countries

A Comprehensive Study on Women's Safety

01 **Problem Statement**

An overview of the critical issues surrounding women's safety globally.

02 **Data Loading and Exploration**

The initial phase of the project focusing on acquiring and exploring relevant data.

03 **Data Cleaning**

The process of ensuring the data is accurate and suitable for analysis.

04 **Correlation Analysis**

Analyzing relationships between various factors affecting women's safety.

05 **Composite Scores Creation**

Developing composite scores to quantify women's safety across different contexts.

06 **Data Visualization Techniques**

Employing various visualization techniques to present the data effectively.

07 **Clustering Methodology**

Using clustering techniques to group similar data points for better insights.

08 **Recommendations for Preventive Measures**

Offering actionable recommendations to enhance women's safety based on analysis.

09 **Summary of Key Findings**

A concise overview of the main findings from the analysis conducted.

10 **Conclusion and Call to Action**

Wrapping up the presentation with a strong conclusion and a call to action.

Dataset Visualization

country	MostDan...	MostDange...	MostD...	MostD...	MostD...	MostD...	MostD...	MostD...	MostD...	MostD...
176 unique values	0.3 0.9	212.0 771.8	9.0 100.0	3.0 100.0	6.0 100.0	14.0 100.0	15.0 100.0	41.0 100.0	7.0 100.0	7.0 100.0
	sum 119.7	sum 20.7K	sum 2.7K	sum 77...	sum 2.0K	sum 2.6K	sum 1.8K	sum 3.5K	sum 2.1K	sum 1.7K
India	0.595	541.25	41	30	19	83	44	79	100	74
China	0.7	444.55	23	6	70	86	44	78	29	80
United States	0.823	456.31	51	25	75	81	24	68	36	21
Indonesia	0.7	442.1	37	3	30	66	54	74	86	51
Pakistan	0.481	Empty	Empty	Empty	Empty	Empty	Empty	Empty	Empty	Empty
Nigeria	0.465	Empty	Empty	Empty	Empty	Empty	Empty	Empty	Empty	Empty
Brazil	0.63	624.28	96	49	44	82	30	76	78	25
Bangladesh	0.593	Empty	Empty	Empty	Empty	Empty	Empty	Empty	Empty	Empty
Russia	0.752	592.71	69	77	40	47	50	73	49	41
Ethiopia	0.521	Empty	Empty	Empty	Empty	Empty	Empty	Empty	Empty	Empty
Mexico	0.551	576.05	89	49	88	31	15	74	65	26
Japan	0.866	366.2	47	3	70	34	37	82	20	23

Exploration of the dataset is the foundational step to understand the structure, identify missing values, assess data quality, and discover initial insights.

Here is a visual representation of the dataset.

Tools used: Alpha Tably for Visualization, Python 3 (

Data Cleaning: Ensuring Data Integrity

Checking for missing Values and Dropping them if needed.

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 176 entries, 0 to 175
Data columns (total 11 columns):
 #   Column                                                Non-Null Count  Dtype
---  ------                                                --------------  -----
 0   country                                               176 non-null    object
 1   MostDangerousCountriesForWomen_WomenPeaceAndSecurityIndex_Score_2023  176 non-null    float64
 2   MostDangerousCountriesForWomen_WomensDangerIndexWDI_TotalScore_2019   50 non-null     float64
 3   MostDangerousCountriesForWomen_WDIStreetSafety_2019   50 non-null     float64
 4   MostDangerousCountriesForWomen_WDIIntentionalHomicide_2019  50 non-null     float64
 5   MostDangerousCountriesForWomen_WDINonPartnerViolence_2019  50 non-null     float64
 6   MostDangerousCountriesForWomen_WDIIntimatePartnerViolence_2019  50 non-null     float64
 7   MostDangerousCountriesForWomen_WDILegalDiscrimination_2019  50 non-null     float64
 8   MostDangerousCountriesForWomen_WDIGlobalGenderGap_2019  50 non-null     float64
 9   MostDangerousCountriesForWomen_WDIGenderInequality_2019  50 non-null     float64
 10  MostDangerousCountriesForWomen_WDIAttitudesTowardViolence_2019  50 non-null     float64
dtypes: float64(10), object(1)
memory usage: 15.3+ KB
```

Basic descriptive statistics to get an overview of each numeric column.

```
Country                                0
WPSI_2023                              0
WDI_Total_2019                       126
WDI_Street_Safety_2019               126
WDI_Intentional_Homicide_2019        126
WDI_NonPartner_Violence_2019         126
WDI_IntimatePartner_Violence_2019    126
WDI_Legal_Discrimination_2019        126
WDI_Global_Gender_Gap_2019           126
WDI_Gender_Inequality_2019           126
WDI_AttitudesTowardViolence_2019     126
dtype: int64
```

Correlation Analysis: Understanding Relationships

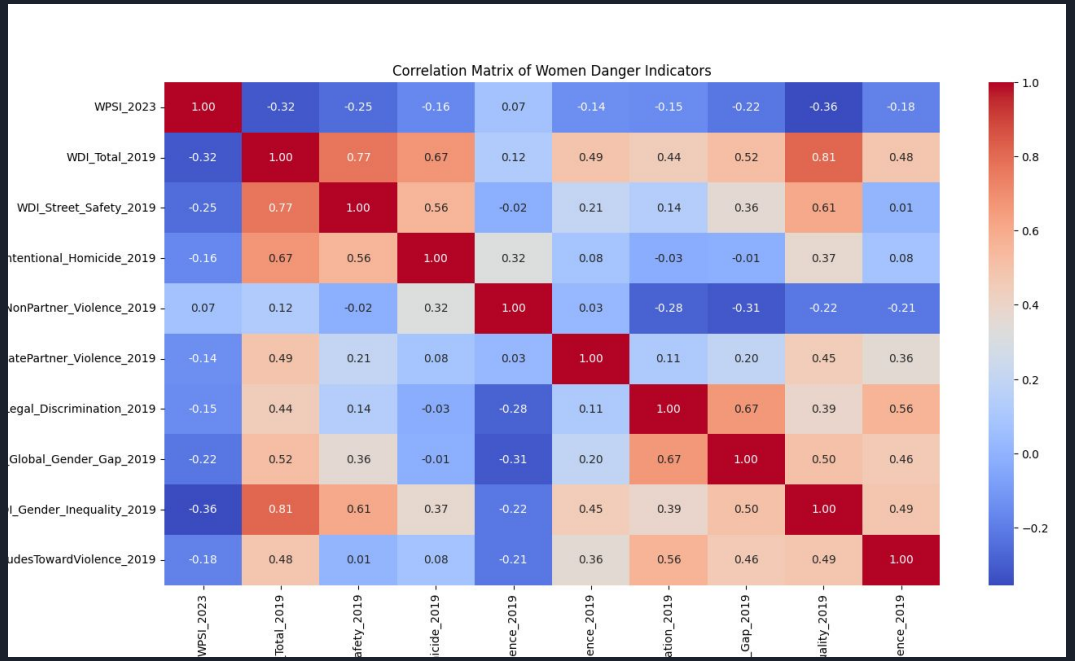
Significant Correlations

High Positive Correlations (Dangerous Factors):

- **Homicide Rates ↔ Danger Scores**
  Countries with high homicide rates tend to have higher overall danger scores.
- **Legal Discrimination ↔ Gender Inequality**
  Countries with discriminatory laws show higher gender inequality.

High Negative Correlations (Protective Factors):

- **Street Safety ↔ Gender Inequality**
  Societies with higher gender equality often report better street safety.
- **Women Peace and Security Index ↔ Danger Scores**
  Peaceful societies score better on women's safety.



Correlation analysis helps identify relationships between variables, providing insights into how different factors contribute to women's safety or danger in various countries.

Composite Scores Creation: Quantifying Danger

Interpretation of Scores

Composite Danger Score: Highlights countries where violence, discrimination, and inequality are prevalent.

Composite Safety Score: Highlights countries with strong legal protections, societal safety, and equality.

Why Use Composite Scores?

1. **Holistic Measurement**: Captures multiple dimensions of danger and safety.
2. **Actionable Insights**: Identifies areas requiring intervention.
3. **Simplification**: Provides a single measure for comparison across countries.

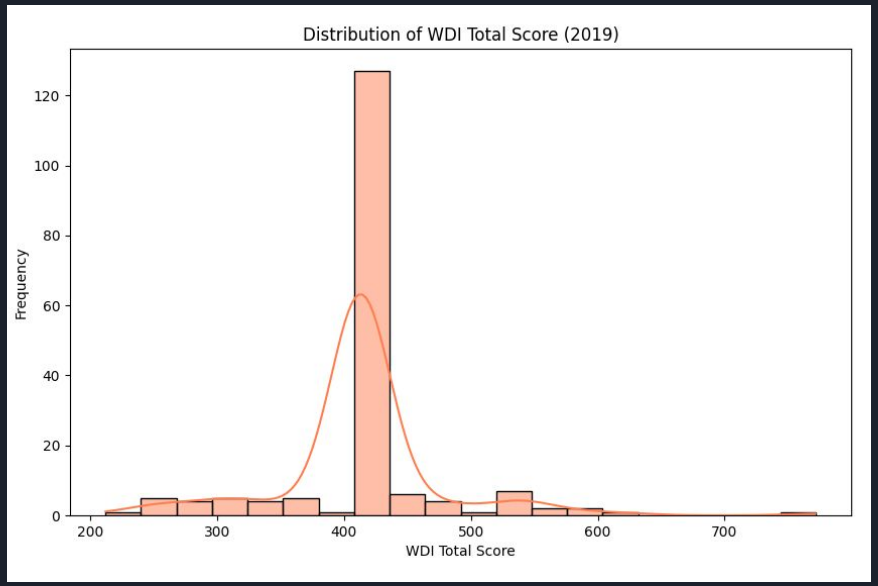
Top 10 countries by Composite Danger Score:

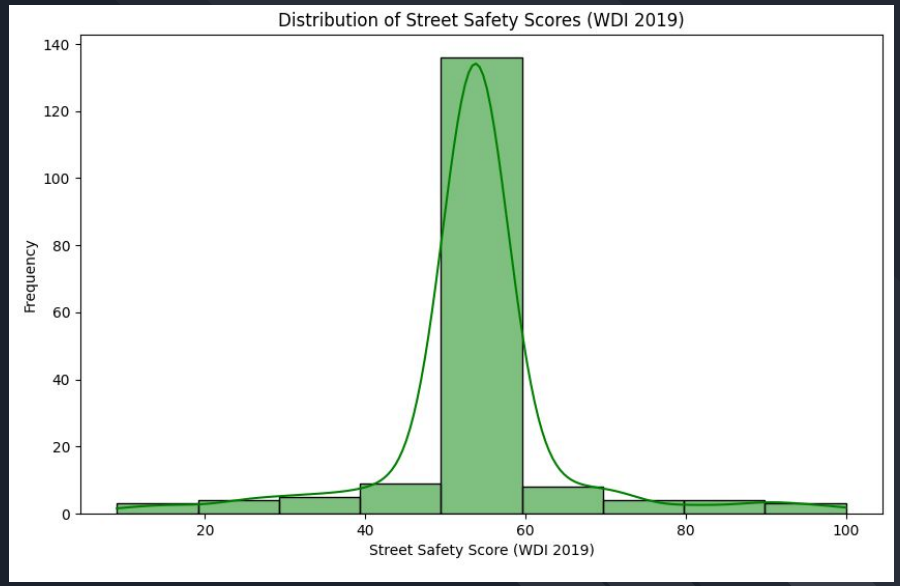
	Country	Composite_Danger_Score
23	South Africa	149.424444
6	Brazil	122.697778
8	Russia	115.412222
16	Iran	113.901111
39	Morocco	113.305556
12	Egypt	113.101111
10	Mexico	112.561111
0	India	112.361111
19	Thailand	112.024444
47	Saudi Arabia	108.928889

Top 10 safest countries by Composite Danger Score:

	Country	Composite_Danger_Score
31	Spain	43.782222
121	Ireland	50.812222
96	Austria	52.292222
98	Switzerland	53.864444
112	Singapore	54.362222
116	Norway	55.435556
90	Portugal	55.620000
127	Croatia	57.836667
38	Poland	58.247778
37	Canada	59.758889

Data Visualization by Plotting using Python





Danger Score Distribution

- **Purpose**: Highlight countries with high danger scores.
- **Visualization:** Histogram with KDE (Kernel Density Estimate).

Street Safety Distribution

- **Purpose**: Understand the overall distribution of street safety scores across countries.
- **Visualization**: Histogram with KDE (Kernel Density Estimate).

Cluster Methodology

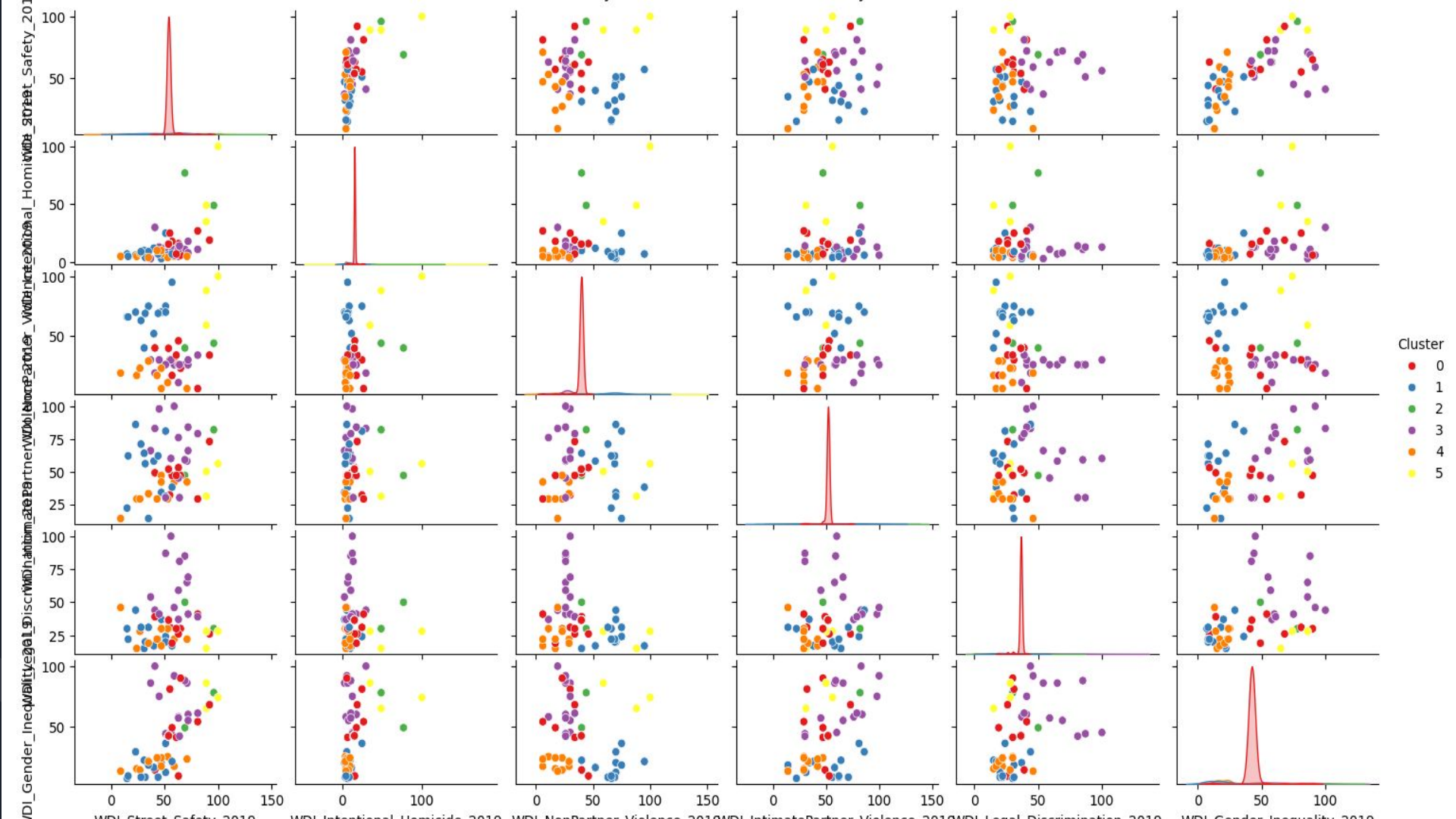
Clustering is an unsupervised machine learning technique that groups data points based on their similarities.

1. Grouping Countries by Risk Profile

- **Purpose**: Divide countries into clusters (e.g., low-risk, medium-risk, and high-risk).
- **Benefits**:
  - Simplifies complex data by summarizing it into categories.

2. Visualizing Relationships

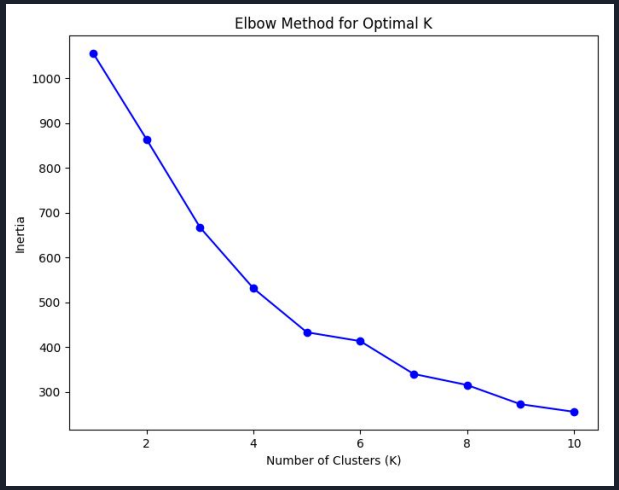
- Plotting clusters (e.g., using a scatter plot) makes it easier to understand how countries differ based on danger indicators like `Street Safety`, `Legal Discrimination`, and `Gender Inequality`.

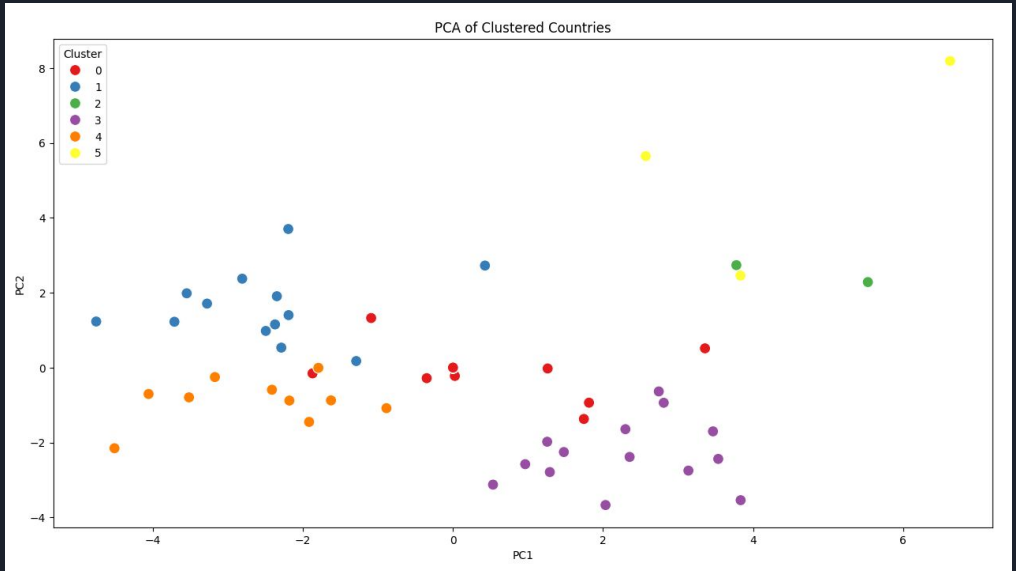

Cluster
0
1
2
3
4
5
WDI_Street_Safety_2019
WDI_Intentional_Homicide_2019
WDI_NonPartner_Violence_2019
WDI_IntimatePartner_Violence_2019
WDI_Legal_Discrimination_2019
WDI_Gender_Inequality_2019

Elbow Curve and PCA of Cluster

How They Work Together

1. **Elbow Curve**: Determines the optimal number of clusters.
2. **PCA**: Reduces data dimensionality for:
   - Easier interpretation.
   - Effective visualization of the clusters in low-dimensional space.
   - Improved computational efficiency for clustering algorithms.





Together, these tools ensure that the clustering process is both statistically sound and visually interpretable, making it easier to derive actionable insights from the data.

Recommendations for Preventive Measures

1. Strengthen Legal Protections :

Enforce stricter laws against gender-based violence, including domestic violence and harassment.

2. Promote Gender Equality :

Reduce gender inequality through education, economic opportunities, and political representation.

3. Improve Street Safety :

Enhance public safety through better street lighting, CCTV surveillance, and increased police presence.

4. Raise Awareness and Education :

Conduct campaigns to challenge harmful societal norms and attitudes that perpetuate violence against women.

5. Strengthen Support Systems :

Train healthcare and law enforcement personnel to handle gender-based violence sensitively and effectively.

Summary and Conclusion

This project analyzes the factors contributing to the safety and danger levels for women in different countries, using indicators such as **Gender Inequality**, **Street Safety**, **Legal Discrimination**, and more. By clustering countries and ranking them based on composite danger and safety scores, the project identifies high-risk nations and provides data-driven insights.

Key findings:

- Countries with high danger scores often have poor gender equality and legal discrimination.
- Safety scores are strongly linked to effective governance and progressive societal norms.
- Clustering highlights distinct risk profiles, enabling tailored recommendations for each group.

Call to Action

For Governments:

- Prioritize reforms in legal protections for women.
- Allocate resources to enhance street safety and support systems.

For International Organizations:

- Provide funding and technical assistance to countries struggling with gender-based violence.
- Foster global awareness campaigns promoting women's safety and equality.

Conclusion

The analysis underscores the urgent need for legislative, societal, and infrastructure reforms to improve women’s safety globally. High-risk countries require immediate attention, while medium- and low-risk nations should maintain and refine their policies.