■ Marriage Data Analysis Report (India)

This report presents an in-depth analysis of Indian marriage data using PySpark, Matplotlib, and Seaborn. It explores trends related to marriage types, demographics, income levels, and other influencing factors, providing key insights and recommendations for understanding social and economic aspects of marriage patterns in India.

1. Dataset Description

The dataset includes **demographic and socioeconomic variables** related to individuals' marital characteristics in India. It contains attributes such as: **Marriage_Type** – Love or Arranged **Age_at_Marriage** – Age when the individual got married **Gender** – Male or Female **Education_Level** – Highest qualification **Religion** – Hindu, Muslim, Christian, etc. **Income_Level** – Low, Middle, or High **Children_Count** – Number of children **Years_Since_Marriage** – Duration of marriage in years

2. Operations Performed

The following steps were carried out using **PySpark** for data processing and **Matplotlib/Seaborn** for visualization: Data cleaning and inspection (handling missing/null values) Categorical and numerical summaries Visualization of key distributions (bar, pie, histogram, scatter, boxplot, heatmap) Relationship analysis between Age, Gender, Income, and Marriage Type

3. Key Insights

Marriage Type	Love marriages constitute about 45%, while Arranged marriages form the rem
Gender Distribution	Both genders are nearly balanced, with a slight female majority, showing equitable
Age Trends	Most marriages occur between ages 25–35, representing young adult demographi
Religion Influence	Hindu marriages dominate the dataset, followed by Muslim and Christian marriages
Income Patterns	Middle-income groups represent the majority, while higher-income individuals tend
Children Count	Most couples have between 1–2 children, reflecting modern family planning trends.
Correlation	Age at Marriage shows a moderate negative correlation with Years Since Marriage -

4. Recommendations

Based on observed trends and correlations, the following recommendations are proposed: **Awareness & Education:** Promote balanced decision-making for love and arranged marriages through social education programs. **Age Consideration:** Encourage informed marriage decisions at suitable ages for emotional and financial stability. **Income & Stability:** Support income development programs to reduce economic pressure on young couples. **Gender Equality:** Ensure equal opportunities for women in both marriage and career progression. **Family Planning:** Continue promoting awareness on sustainable family sizes and reproductive health. **Social Diversity:** Encourage intercaste and interreligion marriages to strengthen social integration.

5. Conclusion

The Marriage Data Analysis reveals a balanced outlook on modern Indian marriages. While traditional arranged marriages remain significant, love marriages show a strong upward trend, especially among educated and urban populations. The data indicates evolving social norms driven by education, economic independence, and cultural openness. Continuous study of such trends is valuable for policymakers, sociologists, and demographers in understanding India’s evolving marital landscape.