NATIONAL HEALTH SURVEY ANALYSIS

TEAM NAME: ANALYSIS WIZARDS

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INTRODUCTION

01 Brief Background

The dataset appears to be derived from National Family Health Survey (NFHS) data, which collects extensive information on household demographics, healthcare access, maternal and child health, lifestyle behaviors (like tobacco and alcohol consumption), and non-communicable diseases. This data is crucial for public health planning, policy-making, and socio-economic analysis.

02 Purpose Of The Project

The project aims to explore key trends in public health, demographic distribution, and lifestyle patterns at the district level across India. The findings can help identify disparities, correlations, and areas needing intervention.

03 Problem Statement

India faces multiple challenges in healthcare, education, and social well-being. While there is data available, deriving meaningful insights from large datasets remains a challenge. This project will focus on.Understanding regional disparities in health indicators .Identifying key factors affecting public health and mortality rates.

04 Objective Of Data Visualization

Demographic Analysis: Alcohol Consumption Male vs Female.
Health Indicators: Impact On B.P Due to Alcohol & Tobacco Consumption.
Correlation Studies: Mother Folic Acid Consumption 180 Days vs Population Of Age Below 15 Years.
State-wise Comparison: Visualizing variations across different states and union territories.

DATASET OVERVIEW

01 Data Sources

This data has been extracted from National Family Health Survey (NFHS) - 2019-21 from kaggle.

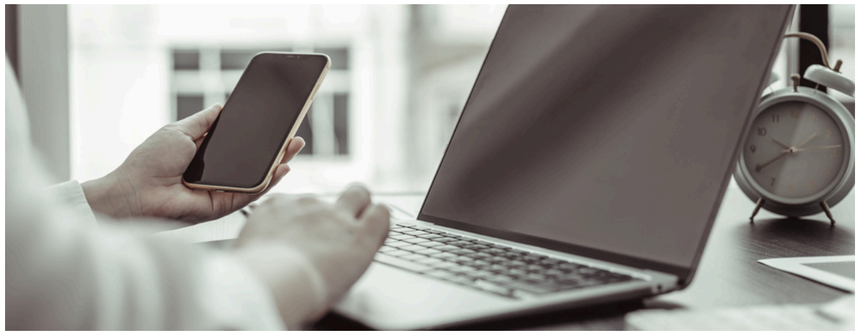
02 Dataset Description

The dataset comprises 706 rows and 109 columns, providing detailed insights into the demographic, health, and behavioral characteristics of populations across various districts in India.

03 Key Attributes

Key attributes include geographic identifiers such as District Names and State/UT, along with survey-specific data like the Number of Households surveyed and the Number of Women and Men interviewed.

TOOLS USED FOR VISUALIZATION



Python Libraries:

01 **Matplotlib**

Matplotlib is a powerful Python library for creating static, interactive, and animated visualizations .

02 **Numpy**

NumPy is a Python library for numerical computing and arrays.

03 **Pandas**

Pandas is a Python library for data manipulation and analysis.

06 **Seaborn**

Seaborn is a Python library for statistical data visualization.

VISUALIZATION TECHNIQUES

01 Scatter Plot

A scatter plot visually represents the relationship between two variables using points, identifying correlations, patterns, or outliers effectively.

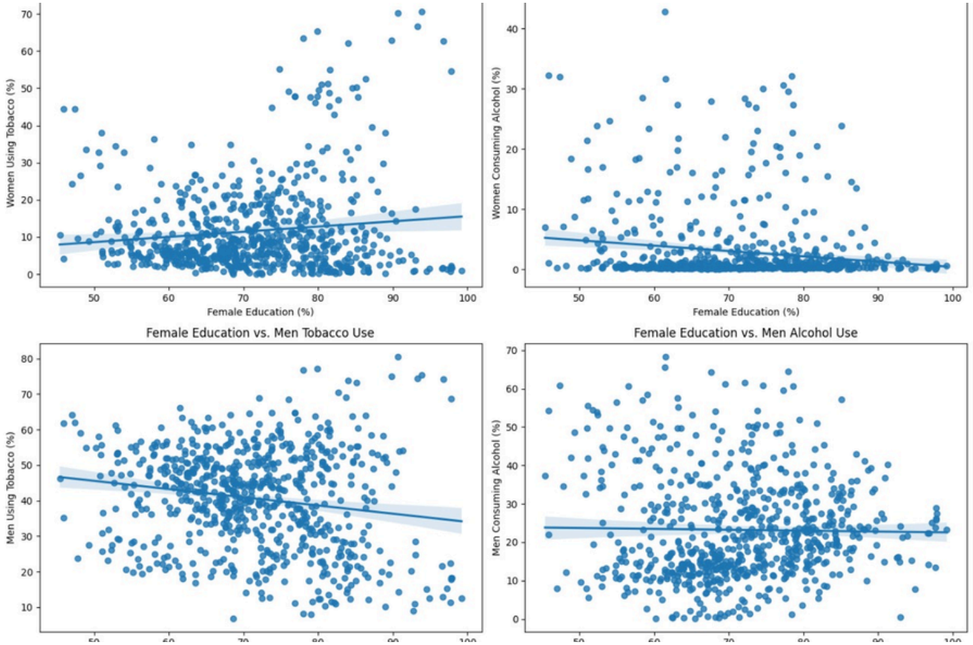
02 Clustered Bar Chart

A clustered bar chart compares multiple categories using grouped bars, displaying values side-by-side for easy comparison of different data sets.

03 Heat Map

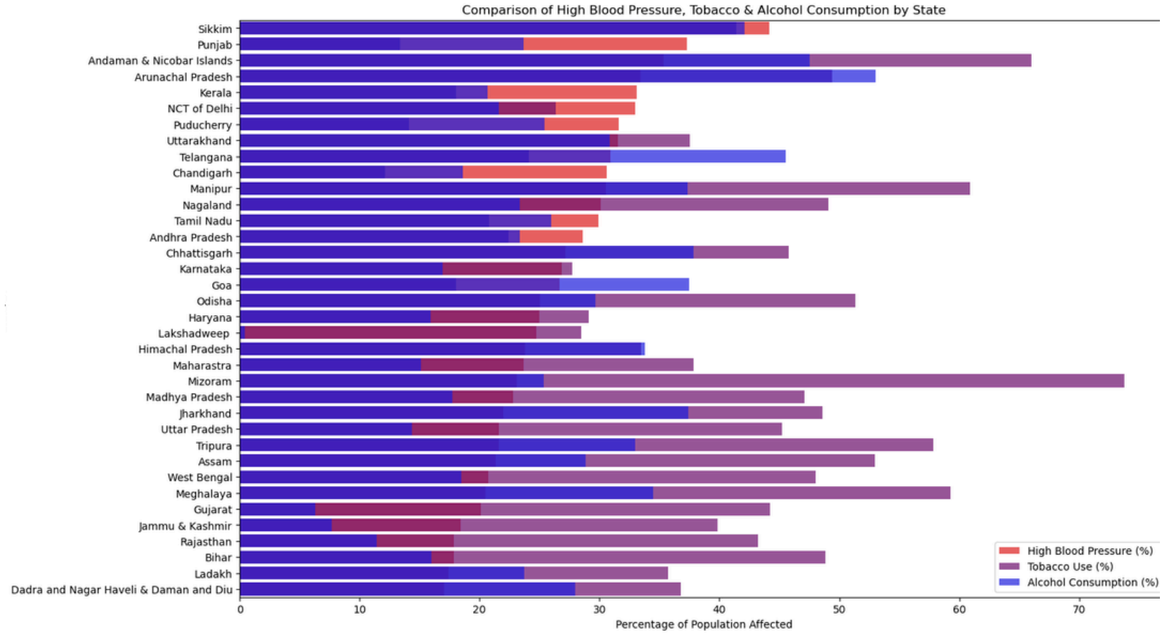
A heat map uses color gradients to represent data values, making it easy to visualize patterns, correlations, and density across variables.

EXPLORATORY DATA ANALYSIS



Alcohol Consumption

- ***Higher female education*** may be slightly linked to ***increased tobacco use*** among women.
- ***Higher female education*** is associated with ***lower alcohol consumption*** among women.
- ***Increased female education*** tends to correlate with ***decreased tobacco use among men***.
- There is a slight ***negative correlation*** between ***female education and male alcohol consumption.***



Impact On B.P Due to Alcohol & Tobacco Consumption

- States with ***higher hypertension*** rates face ***increased medical costs*** and reduced workforce productivity.
- ***High tobacco usage*** can lead to ***greater healthcare expenses*** and lower life expectancy, impacting economic growth.
- ***Excessive alcohol consumption*** raises the risk of lifestyle diseases, reducing productivity and ***increasing healthcare costs.***
- Combined health issues from hypertension, tobacco, and alcohol use can strain state economies and public health systems.

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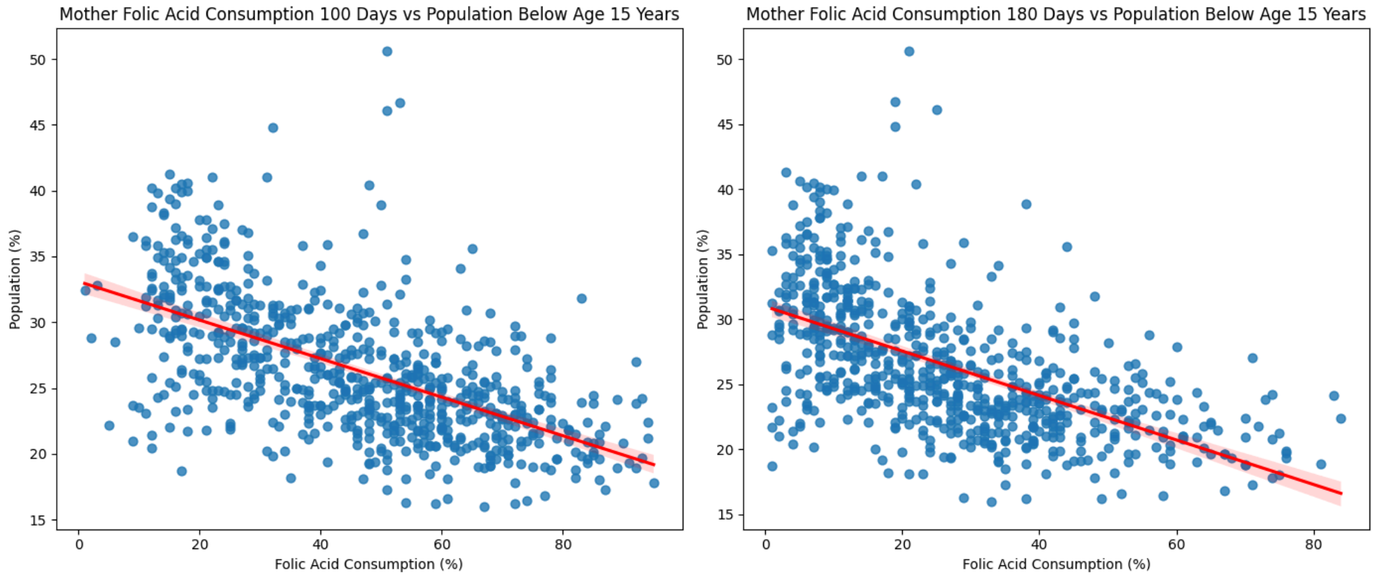
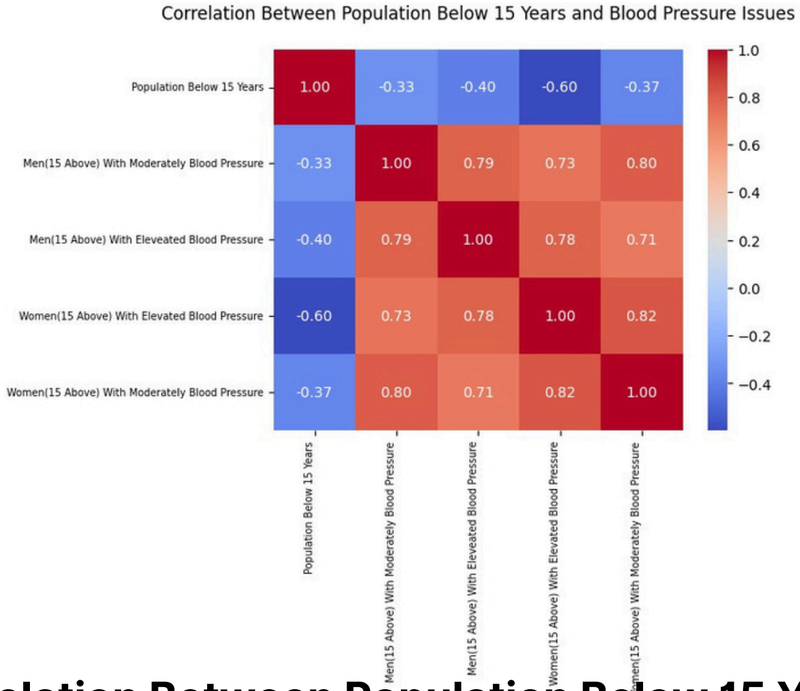


Folic Acid Consumption

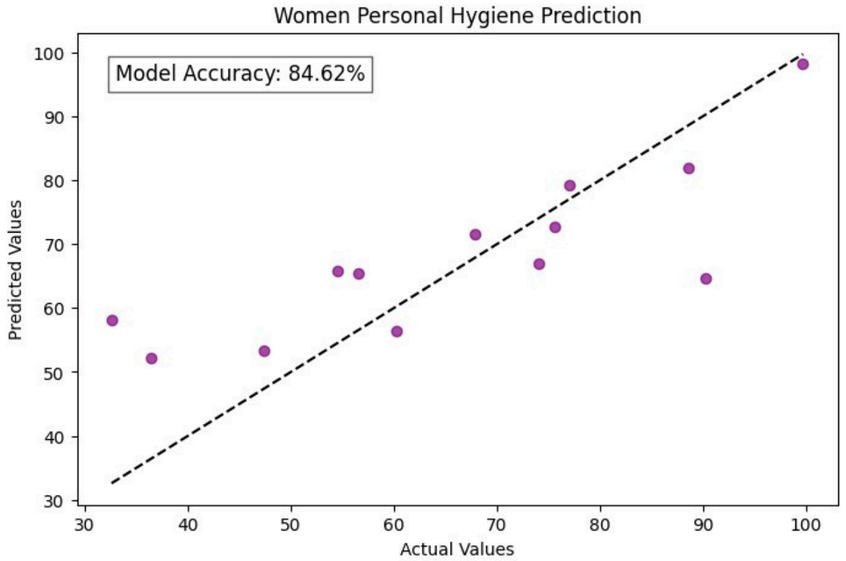
- The left plot compares maternal ***folic acid consumption*** over 100 days to the percentage of the ***population below 15 years.***
- The right plot examines the same relationship for ***180 days of folic acid consumption.***
- Blue dots represent data points, and the red regression line with a shaded confidence interval indicates a ***negative correlation.***
- Both plots show a ***clear downward trend***, suggesting ***higher maternal folic acid*** consumption is linked to a ***lower percentage of the population under 15 years.***



Correlation Between Population Below 15 Years And Blood Pressure Issues

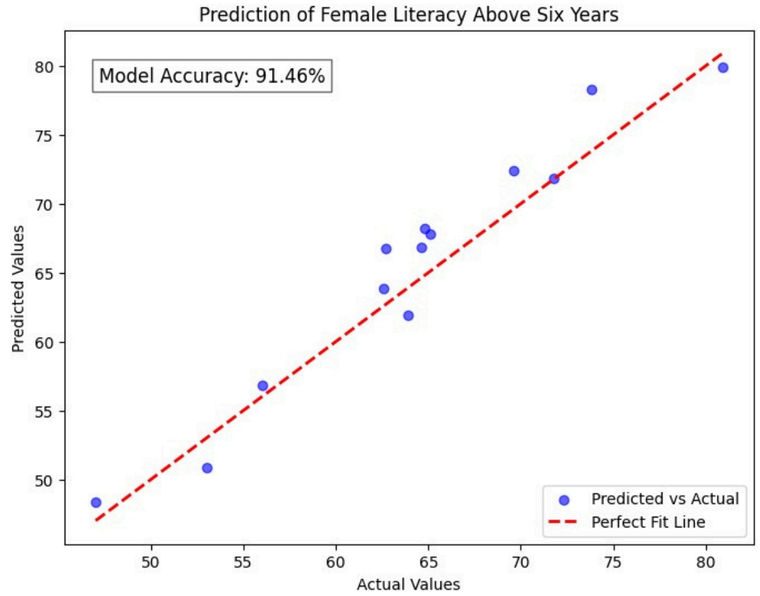
- There is a ***negative correlation*** between the ***population below 15 years and blood pressure issues.***
- As ***high blood pressure prevalence increases***, the younger ***population tends to decrease.***
- This suggests a potential fertility issue linked to high blood pressure.
- ***High blood pressure*** may ***negatively impact*** reproductive health, ***leading to lower birth*** rates.

PREDICTIVE MODEL



Women Hygiene Prediction

- This regression model effectively predicts women’s personal hygiene scores,achieving an impressive 84.62% accuracy.
- The strong alignment between actual and predicted values demonstrates the model's reliability and consistency.
- The dashed regression line clearly shows the trend, indicating a well-fitted model.
- With its high accuracy, this predictive model can provide valuable insights for decision-making in hygiene awareness programs.



Female Literacy Prediction

- This regression model accurately predicts female literacy rates above six years, achieving an excellent 91.46% accuracy.
- The strong alignment between actual and predicted values demonstrates the model's reliability and consistency.
- The dashed regression line clearly shows the trend, indicating a well-fitted model.
- With its high accuracy, this predictive model can provide valuable insights for decision-making in hygiene awareness programs.

CONCLUSION

01

Since higher female education reduces alcohol consumption in women and men, governments can invest more in women's education to promote healthier lifestyles. Schools & colleges can integrate health education on the risks of tobacco and alcohol.

02

Higher tobacco/alcohol consumption leads to increased healthcare expenses & lower life expectancy. Governments can impose higher taxes, regulate sales, and run awareness campaigns to reduce consumption.

03

States with high hypertension rates should implement early screening programs, workplace health checkups, and subsidized medication programs

04

Educate people on how high blood pressure affects reproductive health. Launch screening programs for early detection of hypertension in reproductive-age adult. Promote dietary & lifestyle changes (low-sodium diets, stress management) to reduce hypertension. Encourage corporate wellness programs to keep the working-age population healthy.

THANK YOU

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