

# MISSING PERSON ANALYSIS

## Project Overview and Objective:

This project focuses on cleaning, transforming, and analysing missing persons data using **Excel** and visualizing it through an interactive **Power BI** dashboard. The goal is to convert raw data into clear **insights** that help understand **trends, patterns, and key factors** related to missing person cases.

The main objective is to demonstrate **effective data preprocessing** in **Excel** and create a **Power BI** dashboard that **visualizes** missing persons information clearly. This helps users make informed decisions by exploring state-wise, district-wise, gender-wise, and age-wise missing data.

## Data Sources:

- **Description and Timeline** - The dataset was obtained from the **India Data Portal**, which aggregates publicly available data from government sources. It contains district-wise and state-wise missing persons information for the **timeline 2021–2022**.
- **Domain** - This project falls under the **Public Safety & Social Welfare Analytics** domain, focusing on analysing missing persons data across regions, gender groups, and age groups.

## Problem Statement:

- To analyse missing persons data across states and districts to identify regions with higher missing cases.
- To study gender-wise and age-wise missing patterns (children vs adults) for better understanding of vulnerable groups.
- To observe yearly trends in missing incidents to detect increases, decreases, and areas requiring attention.
- To support public safety planning by highlighting hotspots and demographic categories with higher missing cases.

## Attribute (Column / Features) Details:

Attribute Name	Data Type	Description
Year	Integer	Year of the missing person record
State Name	Text	State where the case was reported
District Name	Text	District under the respective state
Registration Circle	Text	Police station / registration circle reporting the case

Male 0–12 years	Integer	Number of missing males aged 0–12
Male 12–16 years	Integer	Number of missing males aged 12–16
Male 16–18 years	Integer	Number of missing males aged 16–18
Male 18+ years	Integer	Number of missing males aged 18 and above
Female 0–12 years	Integer	Number of missing females aged 0–12
Female 12–16 years	Integer	Number of missing females aged 12–16
Female 16–18 years	Integer	Number of missing females aged 16–18
Female 18+ years	Integer	Number of missing females aged 18+
Transgender Missing (All Age Groups)	Integer	Missing transgender persons
Children (0–18)	Integer	Total missing children aged 0–18 (all genders)
Adult	Integer	Total missing adults aged 18+
Male Missing Total	Integer	Total missing males across all age groups
Female Missing Total	Integer	Total missing females across all age groups
Transgender Missing Total	Integer	Total missing transgender individuals
All Gender Missing Total	Integer	Combined missing persons (male, female, transgender)
Missing Level Category	Categorical	Category of missing case (Child/Adult/etc.)
Missing Male Category	Categorical	Classification of male missing category
Missing Female Category	Categorical	Classification of female missing category
Missing Transgender Category	Categorical	Classification of transgender missing category

### Tools & Technologies Used

- **Excel** – Used for data cleaning, formatting, preprocessing, and creating initial pivot tables.
- **Power BI** – Used for data modelling, DAX measures, interactive visualizations, and dashboard development.

## Tasks Performed:

- **Data Cleaning & Transformation:**  
Removed duplicate records, handled empty or incorrect values, standardized text formats (state, district, registration circle), and cleaned age/gender columns.
- **Formatting & Structuring:**  
Corrected column headings, applied proper data types, and ensured numeric fields were consistent.
- **Filtering & Sorting:**  
Used Excel filters to focus on valid records and sorted data by state, district, gender, and age categories for easier analysis.
- **Pivot Tables:**  
Created Pivot Tables to summarize missing persons by state, district, gender, and age groups for initial insights and pattern identification.

## Calculated DAX Measures:

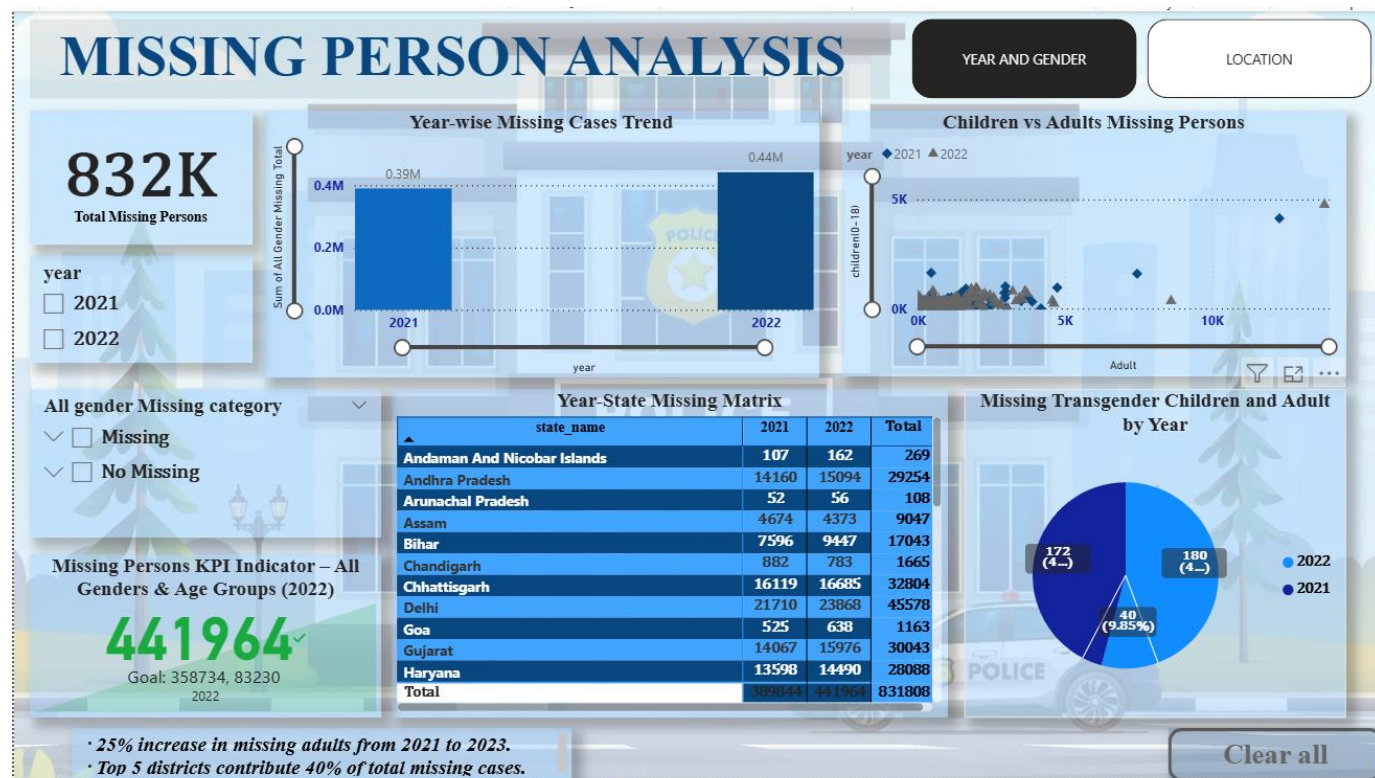
I created several DAX measures to support analysis and KPI and CARD visuals in the dashboard.

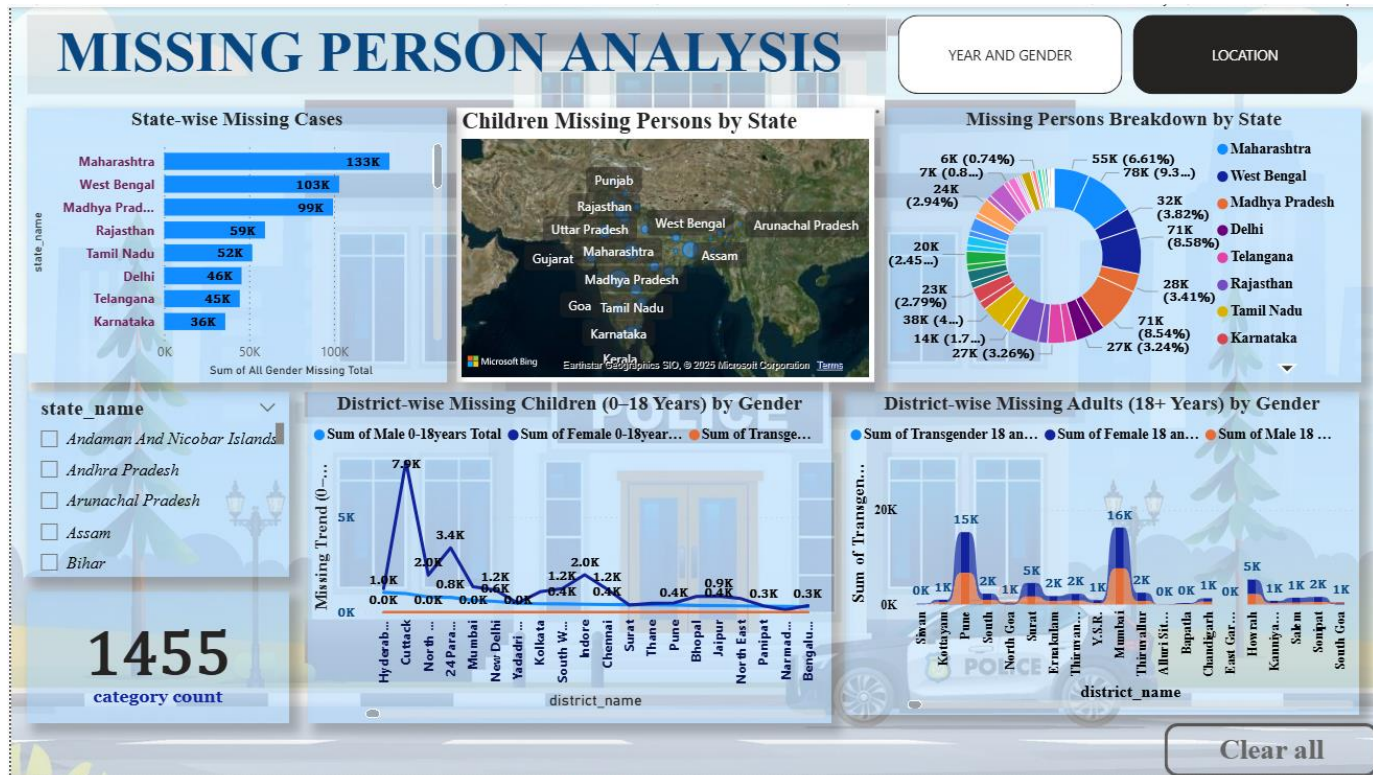
Below are the measures I implemented:

### Main Measures Created:

- Total Missing Persons
- Total Count Missing Person

## Analysis and Visualizations (Power BI):





## Dashboard Features (Power BI):

### **Multiple Visualizations:** (Based on the Problem Statement)

This dashboard includes different visual types to explain missing person trends clearly:

- Bar Charts – State-wise total missing persons
- Column Charts – Year-wise missing cases trend
- Line Charts – District-wise missing children and adults by gender
- Donut/Pie Chart – State-wise missing persons distribution
- Map Visual – State-level children missing cases
- Cards/KPIs – Total missing persons count, category count, KPI indicators
- Matrix/Table – State-wise and year-wise missing persons summary

These visuals help users understand patterns, hotspots, and year-to-year changes.

## Interactive Report Layout:

The dashboard is fully interactive using:

- **Drill-down** (State → District level)

- **Filters** (Year, State, Missing category)
- **Slicers** (Gender category, State list, Year selection)
- **Tooltip interactions** for deeper insights on each visual

This allows users to explore the data from multiple angles.

### Bookmarks, Clear Titles & Labels:

- Used **bookmarks** for navigation between dashboard pages (e.g., *Year and Gender / Location* buttons).
- Every visual has **clear titles** to easily understand what the chart represents.
- **Data labels** highlight key values like totals, percentages, peaks, and comparisons.

### Consolidated Final Dashboard:

The final dashboard provides:

- Overall missing persons summary (KPI)
- Year-wise trend and comparison
- State and district level insights
- Children vs adult analysis
- Gender-wise and transgender category visuals
- Heatmap and matrix tables for detailed breakdown
- Clear “**Clear All**” button for resetting filters

All visuals are combined into **two main dashboard pages**:

1. **Year and Gender Analysis**
2. **Location and State/District Insights**

This creates a complete, organized, and user-friendly analytical report.

### Dashboard Insight Summary:

- Missing persons increased from **2021 to 2022**, showing a rising trend.
- **Maharashtra, West Bengal, and Madhya Pradesh** are the top states with the highest missing cases.

- District-level charts show **large variations**, with a few districts showing significantly higher missing children and adults.
- Children (0–18 years) and adults (18+ years) show different patterns, with adults contributing the **largest share** of missing cases.
- Transgender missing cases are lower in number but show **consistent reporting across years**.
- The dashboard highlights that the **top 5 states contribute a major portion** of total missing persons in India.

### Key Findings:

- **Overall Missing Persons:**  
The dataset records about **832K missing persons** across two years.
- **Year-wise Growth:**  
Missing cases increased by roughly **10–12%** from 2021 to 2022.
- **Top Affected States:**  
Maharashtra, West Bengal, New Delhi, Madhya Pradesh, and Telangana show the highest missing counts.
- **Children vs Adults:**  
Adults (18+) constitute many **missing persons**, while children (0–18) vary more by district.
- **Gender Breakdown:**  
Female missing cases are close to male cases, with slight variations depending on the state.  
Transgender cases are low but **present in both years**, indicating improved reporting.
- **District Hotspots:**  
Some districts show unusually high missing counts, making them important areas for investigation or resource allocation.

### Conclusion:

This Missing Person Analysis dashboard provides a clear understanding of missing person trends across India. It helps identify **which states and districts require more attention**, highlights **gender and age disparities**, and shows **year-to-year changes** in reported cases. The interactive visuals allow users to explore the data from different perspectives and support **data-driven decision-making** for public safety, policy planning, and awareness efforts.

## **Executive Report (Short Version):**

The Missing Persons Analysis project transforms raw data into meaningful insights using Excel and Power BI. The dashboard highlights year-wise trends, state and district hotspots, gender-based breakdowns, and children vs adult missing patterns. With interactive filters, drill-downs, and KPIs, the dashboard reveals that missing cases increased from 2021 to 2022, with certain states contributing many cases. This report supports better decision-making by identifying vulnerable groups and high-risk regions.